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The Indiana property tax has been the subject of numerous articles in these pages over the years. For decades Indiana relied on the property tax as its dominant means of raising revenues for governmental functions. Despite the introduction of a state income tax and a state sales tax, the property tax remained a significant issue. In 1973 the legislature enacted a new tax package that has brought new discussion and debate into the public arena.

The three articles in this issue continue our efforts to explain the property tax program in Indiana and to offer some review of the ideas underlying the program's changes over time. When the 1979 General Assembly reexamined the program the nation was attempting to come to terms with Proposition 13 as enacted in California; Edward Bowman offers a perspective on that controversial issue. Reassessment of property was also on the minds of the people's representatives; John Koppin explores the alternatives the legislators faced. Finally, the 1979 General Assembly had to resolve issues deferred by earlier legislation; Scott Lloyd details the legislature's "third generation" controls package.

Together these three articles offer an important update on property taxation in Indiana.

— MJM

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Proposition 13: The Indiana Response and the Challenge to Business

EDWARD J. BOWMAN

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Both proponents and opponents marked the first anniversary of the adoption of California's Proposition 13 with mixed emotions. Many of those who rejoiced on June 6, 1978, when this revolutionary constitutional change was adopted, now feel that its results have fallen far below their expectations. On the other hand, experience to date has demonstrated that the opponents who had predicted immediate disaster were wrong.

When it took effect on July 1, 1978, California's constitutional amendment contained four key provisions:

1. The amount of the property tax that can be collected is limited to 1% of 1976 market value;
2. The assessed value of property cannot be increased by more than 2% each year unless it is sold, at which time it can be reassessed according to its market value;
3. No other local tax can be increased or new tax imposed without approval by two-thirds of the qualified voters;
4. No new state taxes can be imposed unless approved by at least a two-thirds vote of both houses of the California legislature.

*Mr. Bowman serves as tax counsel for the Indiana Manufacturers Association and is Executive Vice President, Indiana Broadcasters Association.

The emotional oratory and rhetoric about Proposition 13 made it difficult to ascertain the actual effects of the proposition. Even the extensive study of Proposition 13 commissioned by the California legislature reflects negative biases on the part of the authors. But an in-depth (and extremely valuable) report of the California Department of Finance provides comprehensive statistical and analytical information for evaluating the impact of Proposition 13 on governmental services in California.

California's experience is significant for anyone who is concerned about, or involved with state and local tax matters. It holds deep interest for Indiana because of the comprehensive property tax reforms adopted here in 1973. In addition, the California tax revolt has far-reaching implications for the Indiana business community. Implementation of Proposition 13 has disclosed new potential for attacks on business, and it has revealed an appalling lack of popular understanding about the taxation of business.

In this context, an analysis of Proposition 13 highlights three fundamental questions. First, how has the proposition affected California to date? Second, how have the nation and Indiana responded to the proposition? Third, how should Indiana's business community approach the tax limitation issue in the future?

I. HOW HAS PROPOSITION 13 AFFECTED CALIFORNIA TO DATE?

Californians have experienced substantial property tax relief. Property taxes were slashed by approximately 57%, and the total statewide reduction was approximately \$6.5 billion. Records reveal that reductions for some homeowners in major urban areas exceeded two-thirds of the previous year's tax bill.

The initial effect of Proposition 13 on local governmental services generally has been considered minimal. A substantial portion of the decreased property tax revenue was replaced by state aid. Within less than three weeks after the adoption of Proposition 13, California's lawmakers enacted legislation allocating to local units more than \$4 billion in state surplus funds. These distributions took the form of block grants, without any program restrictions or mandates. Elementary and secondary education received the largest portion: \$2.1 billion. The fifty-eight California counties received the next largest portion: \$1.5 billion. Assistance to the counties also involved a transfer of governmental functions: the state of California assumed primary responsibility for health and welfare programs. The remaining funds, \$672 million, were allocated between California's cities, special districts and community colleges.

In addition to this massive infusion of state funds, California's cities and counties were able to draw upon some substantial surpluses of their own. The California Department of Finance study disclosed that counties had reserves in excess of half a billion dollars, while total city surpluses exceeded three quarters of a billion dollars. Substantial increases in sales tax collections, resulting from inflation, also benefited counties and cities.

Further, California counties imposed new and increased fees and service charges totaling some \$22 million, and cities increased their fees by more than \$102 million. Some local units of

government also began to use federal revenue sharing funds for operating costs rather than restricting these monies to capital construction.

Local Budgets Increased— Cutbacks and Layoffs Occurred

Statewide, the net result in the year following Proposition 13 was that California counties increased their budgets by almost 10%, and the 372 cities reporting to the Department of Finance increased their budgets by approximately 4%. These increases, however, did not keep up with the demands for expanded governmental services nor the inflation-induced increased costs of providing these services. Accordingly, there was a curtailment of local governmental services in California.

As a condition of receiving state distributions, the California legislature mandated a freeze on salaries. In addition, most local governments instituted a freeze on hiring. These two elements resulted in a substantial reduction in the number of public employees. The California State Employment Development Department estimated that Proposition 13 was directly responsible for the loss of almost 17,000 public-sector jobs through layoffs. The total reduction in public employees exceeded 100,000 jobs because of these layoffs plus resignations, retirements, and the freeze on hiring new employees.

The California economy has been so strong, however, that the private sector has absorbed the public employee jobs that were lost because of Proposition 13. During 1978, the increase in private employment in California took its greatest jump since the Korean War.

Most of the modifications and cutbacks in local governmental services have been apparent to the average Californian. The hours of public libraries have been curtailed; some libraries have been closed. Summer school classes generally have been discontinued; admission to those

adult education classes still operating is no longer free. Admission charges have been instituted or increased for many activities in California's extensive Park and Recreation System. Because of the California Legislature's mandate to maintain police and fire services at current levels, public safety was not adversely affected by the reduction in property tax revenue available to local units.

City officials interviewed by the California Department of Finance were dismayed by low morale among city employees. On the other hand, they reported greater staff unity, better cooperation with other units of government and expanded opportunities for services through contractual arrangements.

Fiscal Experts Disagree on Future of Proposition 13

The key to the future of local government in California will be the ability of California's state government to continue to provide sufficient replacement funds to recoup funds lost because of reduction in the property tax brought about by Proposition 13. Some economists optimistically forecast burgeoning state revenues; others predict that the revenue increase will not provide adequate funds for the state to meet its own financial obligations. Optimists contend that the stimulus to the private sector provided by Proposition 13 will result in sufficient revenue growth to allow the state to continue to distribute massive sums to local units. Pessimists maintain that the state cannot continue to bail out local units because, under Proposition 13, it has assumed additional responsibility for welfare and medicaid programs. Between these two extremes are those who believe that sufficient state funds will continue to be available, if local units of government implement structural changes for greater efficiency and exercise their existing

authority for raising additional revenue through fees and service charges.

II. HOW HAVE THE NATION AND INDIANA RESPONDED TO PROPOSITION 13?

In California, and throughout the nation, the debate about controlling government expenditures will continue. On one side are those who feel that new and more effective constitutional and statutory limitations should be adopted. Others argue for providing greater governmental accountability through budgetary reform and full disclosure of governmental spending. These arguments lead to a second fundamental question of this analysis, How have the nation and Indiana responded to Proposition 13?

After Proposition 13 was adopted overwhelmingly by a two-to-one vote, constitutional amendments for limitation of taxes and/or spending were proposed in many other states. Several of these proposals offered approaches identical to that of Proposition 13. Others proposed to limit expenditures to a given percentage of a state's total personal income. Still others offered provisions requiring more than a majority vote for the imposition of new or increased taxes. After the general election of November 7, 1978, voters in eleven states had approved constitutional amendments calling for some type of tax and spending limitations. Voters in four states had rejected amendments.

Indiana was not one of the states offering such an option. Instead, its leaders pointed to the property tax reduction previously achieved by the major tax changes adopted in 1973. This response was epitomized by the industrial development advertising campaign, dubbed the "Dragon Promotion," of Indiana's Department of Commerce. The nationally circulated ads asserted that Indiana had already conquered the tax dragon. They carried the caption, "Mr. Jarvis and Mr. Gann, We Slew the Dragon Before You Began."

Increased Property Tax Relief Continues for Hoosiers

The most recent statistics available from the State Board of Tax Commissioners (see chart on pages 6 and 7) show that in 1979 over \$300 million in property tax relief monies will be available for distribution because of the 20% property tax replacement credit.

In addition, in the thirty-seven counties using the local income tax, collections approaching \$54 million will serve as additional replacement revenues for property tax dollars. Because of this massive property tax relief infusion, plus the controls limiting spending increases, the average **adjusted** statewide property tax rate for 1979 computes to \$7.12 per \$100 of assessed valuation.

These statistics, reflecting Indiana's sixth year of experience with the 1973 program, dramatize the face that Hoosier taxpayers are now enjoying close to a 50% reduction in the projected property tax burden. If it were not for this program, the **estimated** 1979 average statewide property tax rate would be **\$13.33**.

In 1979, the **actual** statewide property tax rate of \$9.35 showed virtually no change from the previous year (\$9.34). This rate directly reflects the impact of property tax controls together with the increased state share for funding elementary and secondary education. Significantly, the increases in both statewide assessed valuation and property tax levy were approximately 5%. After the state replacement of the local property tax, the highest average **adjusted** County tax rate among Indiana's ninety-two counties was \$12.50 in Lake County and the lowest was \$3.09 in Randolph County.

Indiana's Comparative Tax Position Is Most Favorable

Indiana's property tax relief, together with a generally conservative approach by govern-

mental officials to public expenditures, has placed the state in a comparatively favorable position. A study by the national Advisory Commission on Intergovernmental Relations showed that Indiana's state and local tax burden as a percent of personal income was substantially below the national average in 1976 (Indiana = 10.4%; national = 12.5%). In addition, a Tax Foundation Report documents that only one other state in the nation, Connecticut, spent less on state and local government per \$1,000 of personal income than Indiana.

The success of the 1973 property tax relief program and the favorable Indiana tax climate were substantial factors in shaping the Indiana response to the national interest in new tax and spending limitations. When the Indiana General Assembly convened in January 1979, the legislators' primary concern was to maintain the existing tax relief and spending control mechanisms. The legislature enacted permanent property tax controls which provide that the tax levy can only increase to the same extent as the tax base (assessed valuation). To accommodate for unusual situations, the new control law also sets both upper and lower limits on the potential amount of property tax increase. In addition, the General Assembly broadened the powers of the state level control boards and made the county local option income tax more attractive.

To compensate for potential property tax increases that might result from reassessment, the lawmakers raised the property tax replacement credit for homeowners from 20% to 30%. Under this law the replacement credit will be reduced 2% each year for five years until it returns to the original 20%.

Some tax measures adopted by the Indiana legislators could, in part, be identified with the national clamor for tax relief launched by Proposition 13. A prime example was the 15% individual income tax credit provided for 1980 to be followed by a permanent reduction in the

Property Tax Statistics and Related Information By County--1979

County	Assessed Valuation 1978	Assessed Valuation 1979	Percent Increase (1979 over 1978)	Tax Levy 1978	Tax Levy 1979	Percent Increase (1979 over 1978)	Average County Tax Rate, 1978	Average County Tax Rate, 1979	Property Tax Rate, 1979	Adjusted Levy, 1979	Average Adjusted County Tax Rate, 1979	Percent Change (1979 over 1978)	Average Adjusted County Tax Rate, 1978
Adams	92.0	98.2	6.8	7.8	8.2	5.4	8.47	8.36	1.6	6.6	6.69	-1.3	6.6
Allen	901.0	939.0	4.2	81.7	84.4	3.4	9.07	9.00	16.9	67.6	7.20	-0.8	7.26
Bartholomew	219.4	231.2	5.4	18.1	19.1	5.5	8.25	8.26	7.6	11.5	4.99	0.4	4.97
Benton	55.0	57.6	4.7	3.1	3.2	1.9	5.63	5.48	1.3	1.8	3.19	-4.5	3.34
Blackford	37.5	39.0	3.9	3.0	3.0	1.2	7.88	7.68	1.0	2.0	5.16	-3.2	5.33
Boone	95.8	102.9	7.4	7.9	8.4	8.23	8.12	1.7	6.7	6.49	1.5	6.59	1.5
Brown	23.3	25.0	7.1	1.5	1.7	10.3	6.42	6.61	0.6	1.1	4.30	3.6	4.15
Carroll	67.5	69.6	3.0	4.2	4.3	2.4	6.17	6.13	1.8	2.5	3.58	0.9	3.55
Cass	126.8	133.6	5.4	8.0	8.9	11.2	6.29	6.63	3.9	4.9	3.68	5.4	3.49
Craw	202.4	202.4	6.0	19.3	20.3	5.2	10.13	10.05	4.1	16.3	8.04	-0.7	8.10
Clark	49.8	57.1	14.7	3.4	3.1	-7.0	6.74	5.47	0.6	2.5	4.37	-20.7	5.51
Clinton	93.6	98.6	5.3	6.1	6.4	5.4	6.52	6.52	2.8	3.6	3.63	5.2	3.45
Crawford	15.5	16.9	8.6	1.6	1.6	2.9	10.08	9.55	0.3	1.3	7.64	-5.2	8.06
Daviess	47.8	50.8	6.2	4.0	4.2	6.0	8.27	8.26	0.8	3.4	6.60	-0.2	6.61
Dearborn	98.5	102.0	3.7	7.6	8.4	10.0	7.74	8.22	1.7	6.7	6.56	6.2	6.18
Decatur	63.7	67.5	6.0	4.4	4.5	2.5	6.91	6.68	2.0	2.5	3.67	-2.7	3.77
DeKalb	86.5	92.5	6.9	5.8	6.3	8.6	6.68	6.78	2.9	3.3	3.60	5.6	3.41
Delaware	278.7	284.9	2.2	30.3	33.0	9.0	10.87	11.60	6.6	26.4	9.28	6.7	8.70
Dubois	94.3	103.0	9.2	7.5	8.0	6.9	7.94	7.77	1.6	6.4	6.21	-2.2	6.35
Elkhart	455.2	484.5	6.4	36.5	37.8	3.6	8.02	7.81	15.5	22.3	4.60	-4.8	4.83
Fayette	71.8	75.3	4.8	6.2	6.6	5.8	8.64	8.72	1.3	5.2	6.97	0.9	6.91
Floyd	126.1	131.0	3.9	11.1	11.8	6.9	8.79	9.04	2.4	9.5	7.23	2.8	7.03
Fountain	47.9	50.2	4.7	3.8	4.3	13.6	7.95	8.63	1.4	2.9	5.84	10.4	5.29
Franklin	31.6	34.0	7.7	2.6	2.7	3.8	8.36	8.06	0.5	2.2	6.44	-3.7	6.69
Fulton	62.7	67.7	8.1	4.2	4.4	6.0	6.70	6.57	0.9	3.6	5.25	-2.1	5.36
Gibson	106.2	134.3	26.5	7.1	8.3	16.7	6.67	6.15	1.7	6.6	4.92	-7.9	5.34
Grant	214.0	219.4	2.5	19.5	20.5	5.2	9.11	9.35	4.1	16.4	7.48	2.6	7.29
Greene	53.8	58.2	8.1	4.1	4.2	4.0	7.59	7.30	0.9	3.4	5.84	-3.8	6.07
Hamilton	232.9	251.3	7.9	19.4	20.1	3.7	8.34	8.02	4.0	16.1	6.41	-3.9	6.67
Hancock	102.0	109.3	7.0	8.1	8.7	7.4	7.93	7.96	4.1	4.6	4.19	2.0	4.11
Harrison	41.4	44.8	8.2	2.9	3.1	7.0	6.97	6.90	0.6	2.5	5.52	1.1	5.58
Hendricks	149.4	160.9	7.7	11.8	12.3	4.5	7.91	7.67	4.3	8.0	5.00	3.1	5.16
Henry	128.0	133.6	4.3	11.9	12.6	6.6	9.26	9.46	2.5	10.1	7.57	2.2	7.41
Howard	293.5	310.2	5.7	24.3	25.4	4.7	8.28	8.20	5.1	20.4	6.56	-1.1	6.63
Howard	97.1	102.8	5.9	7.1	7.2	1.9	7.27	7.00	3.4	3.8	3.68	-4.4	3.85
Huntington	87.3	90.3	3.4	7.3	7.5	3.1	8.33	8.31	1.5	6.0	6.64	-0.3	6.66
Jackson	98.4	107.3	9.1	5.4	6.6	21.5	5.54	6.17	2.6	4.0	3.74	15.4	3.24
Jay	62.8	66.8	6.5	4.7	4.7	2.1	7.41	7.11	2.0	2.7	4.06	-9.6	4.49
Jefferson	83.8	88.7	5.7	6.5	7.3	11.5	7.80	8.23	1.5	5.8	6.58	5.3	6.25
Jennings	37.4	39.8	6.3	3.0	3.1	5.8	7.89	7.85	0.6	2.5	6.28	-0.6	6.32
Johnson	157.6	167.3	6.2	11.3	12.4	9.3	7.18	7.39	6.6	5.8	3.47	2.1	3.40
Knox	91.3	98.2	7.5	8.0	*8.3	3.4	8.81	8.47	1.7	6.6	6.77	-4.0	7.05
Kosciusko	187.1	202.1	8.0	11.1	13.0	18.0	5.93	6.48	2.9	10.1	5.02	25.8	3.99
LaGrange	81.4	88.0	8.1	5.3	5.9	10.7	6.50	6.65	1.2	4.7	5.32	2.3	5.20
Lake	1,416.5	1,439.5	1.6	217.5	224.9	3.4	15.36	15.62	45.0	179.9	12.50	2.0	12.26

La Porte	324.5	341.0	5.1	33.8	35.4	4.6	10.42	10.37	7.1	28.3	8.29	-0.6	8.34
Lawrence	82.8	88.0	6.2	5.8	6.2	6.1	7.05	7.04	3.0	3.2	3.2	0.8	3.58
Madison	326.6	339.6	4.0	31.8	33.3	4.8	9.74	9.82	6.7	26.7	7.85	0.8	7.79
Marion	2,372.4	2,464.7	3.9	258.4	273.6	5.9	10.89	11.10	54.7	218.9	8.88	1.8	8.72
Marshall	125.3	134.9	7.7	8.4	8.8	5.2	6.69	6.54	3.7	5.1	3.79	-2.6	3.89
Martin	20.3	21.5	5.9	1.3	1.4	9.8	6.38	6.62	0.3	1.1	5.28	3.5	5.10
Miami	82.3	87.9	6.9	6.8	7.1	4.1	8.29	8.08	1.5	5.6	6.42	-3.2	6.63
Montroe	203.1	210.0	3.4	17.4	18.1	4.0	8.59	8.64	3.6	14.5	6.91	0.6	6.87
Montgomery	125.4	130.9	4.5	8.7	9.2	5.2	6.94	6.99	1.8	7.3	5.59	0.7	5.55
Morgan	96.1	100.3	4.4	7.9	7.8	-1.4	8.19	7.73	4.0	3.8	3.76	-12.2	4.28
Newton	50.5	55.2	9.3	3.7	3.9	5.0	7.33	7.04	1.4	2.5	4.47	-4.7	4.69
Noble	88.8	93.9	5.8	5.9	5.0	0.0	6.69	6.27	2.9	3.0	3.14	-12.3	3.58
Ohio	7.3	7.6	4.0	-6	-6	8.5	7.55	7.88	0.3	0.3	4.36	3.1	4.23
Orange	38.3	40.6	6.0	2.5	2.9	15.6	6.43	7.01	0.6	2.3	5.61	8.9	5.15
Owen	26.3	27.4	3.9	2.2	2.3	4.5	8.34	8.38	0.5	1.8	6.70	0.5	6.67
Parke	37.4	39.1	4.7	3.1	3.2	2.7	8.26	8.10	0.6	2.5	6.48	-2.0	6.61
Perry	34.7	37.1	7.0	2.5	2.6	5.3	7.07	6.96	0.5	2.1	5.57	-1.6	5.66
Pike	89.1	97.3	9.2	4.6	4.5	-1.4	5.17	4.67	0.9	3.6	3.73	-9.7	4.13
Porter	469.5	487.9	3.9	35.8	38.7	8.0	7.63	7.93	7.7	31.0	6.35	3.9	6.11
Posey	107.5	111.7	4.0	6.2	6.6	6.9	5.79	5.95	1.3	5.3	4.75	2.6	4.63
Pulaski	53.8	58.1	7.8	4.0	3.9	-1.9	7.40	6.73	1.5	2.5	4.23	-13.3	4.88
Putnam	70.7	76.1	7.6	5.4	5.7	6.9	7.60	7.55	1.2	4.6	6.03	-0.8	6.08
Randolph	86.3	88.8	2.9	5.1	5.2	1.7	5.91	5.84	2.4	2.7	3.09	-0.6	3.11
Ripley	53.0	56.6	6.8	3.7	3.7	-1.5	7.04	6.49	1.3	2.4	4.16	-10.5	4.65
Rush	64.7	68.1	5.3	4.1	4.3	3.0	6.40	6.26	1.6	2.7	3.98	-1.0	4.02
Saint Joseph	587.9	624.6	6.3	64.5	69.2	7.2	10.98	11.08	13.8	55.3	8.86	0.8	8.79
Scott	34.6	37.7	8.7	3.0	3.2	7.3	8.52	8.41	0.6	2.5	6.73	-3.9	7.00
Shelby	107.7	115.8	7.5	8.4	8.7	4.6	7.75	7.55	1.8	7.0	6.04	-2.6	6.20
Spencer	48.1	54.6	13.3	3.0	3.2	8.1	6.23	5.95	0.7	2.6	4.75	-4.8	4.99
Starke	56.2	59.6	6.1	3.9	3.9	0.0	7.00	6.60	1.2	2.7	4.55	-5.8	4.83
Steuben	79.5	81.8	2.9	4.9	5.5	11.1	6.22	6.72	2.1	3.4	4.11	10.2	3.73
Sullivan	61.1	61.8	1.3	4.3	4.4	3.0	6.97	7.08	0.9	3.5	5.67	1.6	5.58
Switzerland	17.2	17.8	3.1	1.4	1.4	4.5	7.90	8.01	0.3	1.1	6.40	1.3	6.32
Tipton	332.2	358.9	8.0	29.4	30.3	2.9	8.86	8.44	6.0	24.2	6.75	-4.8	7.09
Tipton	57.9	61.6	6.4	3.8	3.7	-3.0	6.55	5.97	1.7	2.0	3.23	-15.0	3.80
Union	18.2	19.5	6.9	1.1	1.2	4.7	6.17	6.05	0.5	0.7	3.50	1.2	3.46
Vanderburgh	408.8	428.3	4.8	41.2	44.4	7.8	10.08	10.37	8.9	35.5	8.30	3.0	8.06
Vermillion	85.3	90.2	5.8	5.6	5.4	-2.2	6.53	6.04	1.1	4.4	4.83	7.7	5.23
Vigo	247.6	253.9	2.6	29.3	30.5	4.2	11.83	12.02	6.1	24.4	9.61	1.5	9.47
Wabash	100.3	106.8	6.5	6.7	7.1	5.4	6.68	6.61	3.2	3.9	3.64	-0.3	3.65
Warren	36.6	39.0	6.6	2.6	2.7	2.9	7.07	6.82	0.9	1.8	4.60	-5.7	4.88
Warrick	186.9	201.8	8.0	10.9	11.7	6.7	5.85	5.78	2.3	9.3	4.62	-1.3	4.68
Washington	46.3	49.0	5.8	2.8	3.1	7.8	6.11	6.23	1.0	2.1	4.22	3.4	4.08
Wayne	210.3	220.9	5.0	17.1	17.6	2.9	8.11	7.94	7.1	10.5	4.74	-1.5	4.81
Wells	82.6	86.9	5.2	5.7	6.1	5.5	6.96	6.97	1.9	4.1	4.76	0.6	4.73
White	97.5	103.5	6.1	6.3	6.5	4.5	6.42	6.32	2.6	3.9	3.79	-0.5	3.81
Whitley	76.6	82.3	7.5	5.2	5.5	4.9	6.84	6.68	1.1	4.4	5.34	-2.6	5.48
Indiana	15,171.5	15,948.2	5.1	1,416.7	1,491.2	5.3	9.34	9.35	355.2	1,136.0	7.12	0.14	7.11

Chart prepared by Glenn D. Bowman from data provided by the Indiana State Board of Tax Commissioners

income tax rate, from 2% to 1.9%, in subsequent years. The unique plight of the retired and elderly was specifically recognized in legislation that compensated for utility costs and liberalized property tax deductions. Indiana's inheritance tax was amended to eliminate any tax in a transfer between spouses.

No Constitutional Tax Amendments Supported

It is significant that the 1979 Indiana General Assembly did not act upon any resolutions of the Proposition 13 variety.

Nine joint resolutions dealing with tax and spending limitations were presented. Of these, five spoke to the problem of federal spending and called for balancing the federal budget. Only one was enacted: S.J.R. 8 requested Congress to call a Constitutional Convention to propose an amendment to the U.S. Constitution that would require a balanced federal budget in the absence of a national emergency.

The four resolutions dealing with state and local taxation proposed several alternatives: a three-fifths vote of each house of Indiana's legislature in order to impose any new taxes or any increase in current taxes; a limitation on the growth of state expenditures based on the rate of growth of the state's economy; a requirement for voter approval for any state or local tax increases; and finally a limitation on state spending determined in relation to a given percent of personal income. None of these resolutions was reported out of committee. Clearly, there was little sentiment among the members of the 1979 Indiana General Assembly to support any type of limitation similar to California's Proposition 13.

Public Opinion Surveys Show Significant Change in Tax Attitudes

The emphasis placed by Indiana legislators on the issue of a balanced federal budget is

consistent with public opinion surveys taken following the successful implementation of a property tax relief program. Proposition 13 dramatically reduced the California property tax burden, as the 1973 Indiana tax changes dramatically reduced the Indiana property tax burden. In July of this year, at the National Conference of State Legislators, John Shannon, Assistant Director, Advisory Commission on Intergovernmental Relations, discussed the latest ACIR public opinion poll concerning taxation. To the surprise of many, the public, in California and throughout the U.S., no longer view the property tax as the worst and most onerous tax. Instead, popular opinion now ranks the federal income tax as the most detrimental and undesirable tax burden.

While the property tax burden has been curtailed in California and in other states that have adopted tax limitations, the federal income tax continues to heap ever harsher burdens on individual taxpayers. Soaring inflation pushes taxpayers into higher brackets because of the steeply graduated federal income tax schedule. These unlegislated tax increases have compounded the budgetary problems of the average family that must also cope with the rapidly rising cost of living.

The frustrations resulting from these problems strongly surfaced in the Indiana General Assembly during 1979 and far overshadowed any concern for new limitations on state and local taxation and spending. Accordingly, Indiana has now joined with more than thirty other states in appealing to Congress to reduce the federal tax burden and balance the federal budget.

Federal Revenue Sharing's Future Uncertain

It is important to note, as public attitudes have changed, that the property tax and federal income tax problems are not totally unrelated. The solutions to these problems cannot be handled in isolation as though the two matters

were mutually exclusive. In California, and probably to a greater extent in Indiana, the success of property tax relief has been to a significant degree dependent upon the availability of federal revenue sharing dollars for state and local expenditures.

The current federal revenue sharing program is scheduled to expire in September 1980. If Congress, in an effort to balance the federal budget and reduce the federal income tax, would vote to eliminate or substantially curtail the federal revenue sharing program, then Indiana, California and many other states implementing tax and spending limitation programs would be faced with difficult decisions. One of the options would be to return to the property tax for a greater share of the costs of local government.

In addition to these uncertainties at the federal level, it is reasonable to anticipate renewed efforts in the future to make other major modifications in the Indiana tax structure. Although the existing property tax relief and control mechanism is very effective and has the potential of long-term existence, the program places an increasingly greater dependence on state funding for direct tax relief and for local governmental services. Many fiscal experts believe that an effort should be made to prevent any further centralization of fiscal power in Indiana at the state level.

Anticipate New Major Tax Changes in Indiana

Numerous other factors that might precipitate further major tax revisions in Indiana can be identified. Inequities continue to exist in Indiana's state and local taxation scheme. Reformers persist in efforts to bring about the changes necessary to solve clearly identified problems. The tax and spending limitation movement has supporters in Indiana, and as the nationally organized tax reduction movement continues, renewed interest is likely to surface in the state. As Shannon pointed out, inflation not only

affects income tax burdens, it also exacerbates several perennial property tax conflicts that have received exhaustive attention in Indiana in the past.

One of these conflicts concerns the amount of authority that will be vested at the state level to monitor and standardize local assessment practices. Another conflict involves the uniformity provisions of the Indiana Constitution. Dramatic increases in residential property values have caused new pressures on legislatures to deviate from a uniform property tax system and provide preferential treatment to residential taxpayers through a classified property tax system. Local taxpayers' insistence that property tax increases be held down produces yet another conflict when local public employees and officials demand salary increases commensurate with inflationary trends and private sector gains. With no immediate end in sight to the inflationary spiral, these major areas of property tax conflict will continue to be thrust upon the Indiana legislature with increasing intensity.

III. HOW SHOULD INDIANA'S BUSINESSES APPROACH TAX LIMITATION?

Consideration of the future raises the third major query of this article, How should the Indiana business community approach the tax limitation issue? At the outset, it is possible to identify at least three courses of action that would be immediately appropriate and desirable. In addition to these recommended responses, there may be numerous others that would be equally productive and beneficial. One hopes they will surface in the near future as the tax reduction movement continues to gather momentum nationally and in Indiana. Meanwhile, early action on the three suggestions listed here can be extremely significant and constructive in helping to shape the outcome of future tax and fiscal decisions.

1. Attempt to understand the popular sentiment underlying Proposition 13.

Despite the historical stereotypes of political philosophies and parties, evidence indicates that the supporters of tax limitation do not neatly fall into the category of conservative or liberal, nor can they be aligned politically with either the Republican Party or the Democratic Party.

If liberal programs have failed to fulfill their promise, rejection of those programs does not necessarily imply a repudiation of the belief that it is the primary responsibility of government, rather than of the private sector, to assist those in need. By the same token, it would appear that popular sentiment does not necessarily attribute fiscal conservatism to either major political party. Current governmental procedures and mechanisms contain a pro-spending bias that has generally dominated budgetary and fiscal policy decisions regardless of which political party has been in power.

Seymour Martin Lipset and Earl Raab give impressive substantiation to these broad generalizations in a scholarly analysis of Proposition 13, published in *Commentary Magazine* in September 1978, that can be summarized as follows:

The authors, who conducted an exhaustive analysis of public opinion polls from the 1940s through the present day, conclude that the current tax revolt movement can be characterized neither as a selfish repudiation of liberalism nor as a support for right-wing concepts. They did find that American people generally subscribe to the conviction that government is too big, inefficient and wasteful and, accordingly, most Americans consider themselves conservatives.

At the same time, the majority of the American people support government programs to help the poor and the elderly, to promote education and to create jobs. Popular opinion overwhelmingly opposes welfare,

but it simultaneously supports innumerable programs designed to assist the poor. In essence, the position is one of rejecting the historical welfare state concept while supporting governmental assistance for those in need, placing primary emphasis on "helping people help themselves." This attitude has been described as a combination of "ideological conservatism" and "operational liberalism," carrying the labels of either "neoconservatism" or "neoliberalism," depending on personal preference.

This situation offers the business community an excellent opportunity to speak out about the tremendous benefits currently being provided through the American private enterprise system and to point to the great potential for improved well-being of the American people by further expansion of the private sector. This opportunity carries with it a corresponding challenge for business to become increasingly active in helping to solve community problems within the context of the private enterprise system.

2. Participate in the dialogue.

The issues of tax and spending limitations are highly complex and they defy simplistic solutions. The greatest weakness of California's Proposition 13 is that it is an over-simplified partial solution to the multifaceted problem of limiting total governmental spending and taxation. The ideal approach would take into account simultaneously the tax reduction desired; the revenue replacement needs; and the budgetary and structural reforms that would result in greater governmental efficiency and economy.

The complexities of the problem are equally apparent in viewing the issues of federal taxation and spending. Balancing the federal budget might not prove to be the panacea to permanently cure excessive federal spending.

At a given moment in American history, balancing the federal budget could preclude the enactment of a federal tax cut. The resulting limitation on federal spending could seriously impair the federal government's power to stimulate the economy during a recessionary cycle. There is no easy answer to the question of whether a balanced budget is preferable to a tax cut, or whether a tax cut would be better or worse for the economy than a balanced federal budget.

The business community has much at stake in the answers to these questions. Its talent and expertise could be immensely helpful to governmental officials as they grapple with these complex issues. Corporate leaders would be well advised to encourage their economists, statisticians, and other fiscal experts to provide assistance to governmental officials. The ultimate decisions on tax and spending limitation questions will directly affect the future viability of the American private enterprise system.

3. Renew efforts in economic education.

One can easily understand why many business leaders in California did not support the adoption of Proposition 13. They clearly foresaw the backlash that would occur and the attacks that business would endure from great numbers of people who harbor misconceptions and biases concerning business taxation.

Commercial and industrial property owners pay a substantial portion of total property tax collections. Both in California and in Indiana,

the property tax reduction shared by business has been aggressively attacked as though it were in some fashion detrimental to the individual taxpayer. The unenlightened popular bias views the corporate taxpayer as a separate and distinct entity competing for tax relief. This myth, and all of the oratory based upon it, overlooks the fundamental fact that a corporation does not possess the power to remove the tax burden from the American public. And to the extent that the tax burden is concealed from the American public by being indirectly collected through the corporate structure, it results in the most capricious and regressively harmful form of taxation imposed on the American people.

More than a decade ago the Tax Foundation published a report issued by a congressional committee that focused on business taxation. The report asserted: "The need for rethinking tax attitudes, and for revising tax practices, is nowhere more compelling than in the taxation of business. The taxes collected from business are, in reality, concealed taxes taking money from consumers, investors and employees."

Today's attitudes toward business demonstrate an imperative need to educate the American people concerning the economic realities of business taxation. Encouraging signs can be found in legislation adopted at both the federal and state levels providing business tax incentives to stimulate capital investment. Nevertheless, the threats arising from the continued growth of the tax limitation movement demand renewed efforts on the part of business to help the American public understand business taxation.

The Homestead Credit: Indiana's Response to the Reassessment Problem

JOHN E. KOPPIN

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Since its inception in 1973, Indiana's property tax relief system has been a significant political and public policy program. According to an Indiana State Chamber of Commerce *Special Report*, the program can account for direct statewide property tax rate reductions of \$5.61 per \$100 of assessed valuation over its five-year life. Estimates show that the average statewide property tax rate by 1978, assuming a 4.8% annual growth, would have been \$12.72 without the control program. The actual average statewide property tax rate was \$9.38 per \$100 of assessed valuation in 1978. The 20% property tax replacement credits reduced this average rate to \$7.11 per \$100 of assessed valuation. In 1978 alone, \$286.6 million was paid by the State of Indiana in property tax relief[†]. Though the wisdom of state fiscal controls on local governments has been hotly debated since 1973, the current anti-property-tax mood of voters forced even opponents of the system to seek a short-term continuation of the property tax relief system. Despite this support, the program faced several major problems during the 1979 session of the Indiana General Assembly. Of these problems, the most serious by far

was the impact of reassessment on the tax-relief program.

REASSESSMENT

The purpose of reassessment is to raise real property values to current levels. In Indiana, personal property is assessed annually, but real property is assessed only periodically. During the periods between real property reassessments, personal property gradually accounts for a larger share of the tax base than does real property. The business sector, the major holder of personal property, assumes a greater share of the tax levy as personal property accounts for an increased share of the total assessed valuation. When reassessment occurs, the property tax base is balanced again, and real property (primarily residential and farm property) contributes its share of the tax liability. Under Indiana's current property tax levy freeze, the effect of this rebalancing is to increase the amount of tax paid by real property owners while decreasing the amount of tax paid by personal property owners.

The last reassessment to take place in Indiana occurred in 1969. At that time real property was figured at 1967 values. As of 1978, therefore, the values for homes and farms on the assessors' books were over ten years old. A current reassessment would rebalance the tax base, reducing substantially the tax liability for businesses but increasing the share of assessed

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[†]Indiana State Chamber of Commerce, *Special Report*, September 1978, p. 1.

valuation, and consequently the tax liability, for homeowners and farmers.

Table 1 shows the 1978 statewide property tax base mix before reassessment. The business sector's share of the total assessed valuation is 54%, the residential sector's share is 29.9%, and the farm sector's share is 15.7%. Indiana's property tax relief program was established on a tax base similar to this. As the new assessments were examined, the problems for the relief program became clear.

As a result of the reassessment, the base on which the property tax relief program was functioning would undergo a dramatic change. Table 1 shows the shift in the percentage of the tax base in the three sectors. The statewide ratio of business assessed valuation to total assessed valuation would drop by 6.6% after reassessment, the ratio for farms would increase by 2.6%, and the ratio for residential property would increase by 4%. The significance of this shift would be seen in the percentage change of total tax levy for each sector. Tax bills for the residential sector would increase by 13.3% and those for farmers would increase by 16.3%. Property taxes for businesses, however, would decrease by 12%. These changes are significant for a system that promised homeowners little, if any, increase in property taxes due to reassessment.

The shift was not recognized as an important factor until after the 1978 legislative session. Legislators had erroneously assumed that existing strict levy controls on local taxing units would prevent reassessment from signifi-

cantly changing individual property tax bills. Full appreciation for the effect of the change in the property tax base mix came during the summer and fall of 1978. Analysis showed that residential assessments and, therefore, property taxes would increase substantially as a result of reassessment. In the aftermath of California's Proposition 13, political ramifications of large property tax increases for homeowners threatened to be severe. Such increased taxes would undoubtedly discredit the property tax relief program and would perhaps evoke a political revolt similar to those in other states. In the fall of 1978, the State Budget Agency, the State Board of Tax Commissioners, and staff from the Governor's Office began to seek a solution to the reassessment problem.

FIVE ALTERNATIVES

The search for a solution began with a discussion of five major possibilities: 1) an indefinite delay of reassessment; 2) the enactment of a homestead exemption based on either the assessed valuation or a flat percentage rate; 3) a ceiling on the percentage increase in the assessed value of real property; 4) a graduated credit or exemption based on the property tax liability; and 5) implementation of reassessment in steps. Each of these alternatives had merit, but each also had problems.

Delaying reassessment, which had already been done in two previous legislative sessions, seemed a logical choice. An unlikely advocate

TABLE 1
Statewide Assessed Valuation

	<i>Before</i>		<i>After</i>	
	<i>Reassessment</i>	<i>Percent</i>	<i>Reassessment</i>	<i>Percent</i>
Residential	\$ 4,565M	29.9	\$ 7,407M	33.9
Farm	2,393M	15.7	4,002M	18.3
Business	8,290M	54.4	10,462M	47.8
TOTAL	\$15,248M	100.0	\$21,871M	100.0

of this alternative was the business community. Though business would realize the largest immediate gain from reassessment, its long-term interest would be to keep property tax rates low and controlled. Because the property tax relief program had demonstrated its ability to keep rates low and controlled, the business sector wanted to preserve the program at all costs, and consequently shunned the other alternatives in favor of delay. Financial leaders in both the House and the Senate believed that to delay implementation of the reassessment a third time would only fuel criticism that they were "ducking the question." Delay would also exacerbate the problem because the gap between real and personal property values would grow. For these reasons, reassessment delay was dropped from the options list.

The homestead exemption alternative would permanently reduce the assessed valuation for each homestead by 20%. This reduction would eliminate the effect of reassessment for homeowners only, thus solving the reassessment problem at no cost to the state. Under this plan, the tax liability for a house assessed at \$20,000 would be calculated at the assessed value less 20%, or \$16,000. This plan had been submitted in the 1978 session as a 30% exemption and was thought to have a good chance at passage. There were, however, two major flaws in the plan. Though the plan would cost the state nothing, other contributors to the property tax base, farms and businesses, would have to bear the cost of the homestead exemption. The probable unwillingness of these groups to accept this tax burden was a major stumbling block for this approach. Researchers were equally concerned about the questionable constitutionality of the exemption. They believed that a law based on homestead exemption would clearly violate the constitutional mandate for uniformity in property assessments. The great controversy over the homestead exemption might well force the question to court someday, and any law granting home-

stead exemption would be ruled unconstitutional.

The third option was a ceiling on the percentage increase in assessed valuation of all real property, thereby insuring that no tax liability would increase above a predetermined level. Researchers again discovered several problems.

A ceiling limit would cause a tax windfall for owners of newer homes whose assessed valuation would increase the most under reassessment. In addition, the ceiling would penalize municipal units by limiting their bonding authority and by limiting the increase in their property tax levies allowed under the 1977 control program. Since the level of local bonding authority is limited to 2% of assessed valuation, the amount of bonding available to existing municipal units would probably be curtailed under either the homestead exemption or the ceiling plan. Local government was also concerned that if the property tax control program were to remain unchanged, nonadopting counties (who were entitled to increase their property tax levies at the same percentage as the increase of their assessed valuation) would not be able to take advantage of the large reassessment increase. These factors made the assessed valuation increase ceiling an alternative that was difficult to defend or to implement.

The fourth alternative was a graduated credit or exemption based on the actual property tax liability. Under this option, property tax exemptions or credits would be extended to homeowners on the basis of the actual property tax figures as soon as they were made available. This plan was dismissed because the level of funding sufficient to eliminate the effect of reassessment would make the program too expensive.

The final option was implementation of reassessment in stages, thus eliminating the shock effect of a one-year implementation. The primary roadblock to this plan was the sched-

TABLE 2

Statewide Effect of the
20% Homestead Deduction

	<i>Before</i>		<i>After</i>		<i>With 20%</i>	
	<i>Reassessment</i>	<i>Percent</i>	<i>Reassessment</i>	<i>Percent</i>	<i>Deduction</i>	<i>Percent</i>
Residential	\$ 4,565M	29.9	\$ 7,407M	33.9	\$ 5,807M	28.7
Farm	2,393M	15.7	4,002M	18.3	4,002M	19.7
Business	8,290M	54.4	10,462M	47.8	10,462M	51.6
TOTAL	\$15,248M	100.0	\$21,271M	100.0	\$20,271M	100.0

uled date of the next reassessment, 1986. In order to have the 1979 assessments in place before 1986, annual real property tax increases would be large enough to cause concern. Also, colossal administrative problems would result if assessments were changed every year.

HOMESTEAD DEDUCTION

Based on these alternatives and the data available, a plan for a permanent 20% homestead deduction, to become effective in 1980, was introduced in the House of Representatives as part of the 1979 tax package. The bill was assigned to the Ways and Means Committee and ran into great difficulty there among the members from farm districts. They felt that the bill was too hard on farmers, and refused to support it. Table 2 shows the impact of the 20% homestead deduction on farms.

On a statewide basis, the 20% homestead deduction would cause an increase 1.4% above the reassessment increase of 2.6% in the farm

percentage share of the property tax base while causing a decrease 5.2% below the reassessment level in the residential share. This change in reassessment indicated more significant changes in the amount of tax liability to which farm and residential taxpayers would be subject. Table 3 shows the shift in tax burden.

The table indicates that after reassessment homeowners and farmers could expect to see property tax increases of 13.3% and 16.3%. Business property tax liability would decline by 12% as a share of the total levy. The ramifications of the homestead deduction on the tax liability of the three groups is likewise significant.

As result of the homestead deduction, real property taxes for farms would rise 25.8%, the tax levy on business property would drop by 5%, and taxes on residential property would drop by 4.4%. Figures from Grant County, which was frequently used as an example during the planning stages, showed a 15.6% increase in farm property taxes, a 9.9% drop in

TABLE 3

Statewide Tax Levy

	<i>Before</i>	<i>After</i>	<i>Percent</i>	<i>With 20%</i>	<i>Percent</i>
	<i>Reassessment</i>	<i>Reassessment</i>	<i>Change</i>	<i>Deduction</i>	<i>Change</i>
Residential	\$ 339M	\$ 384M	13.3	\$ 324M	(4.4)
Farm	178M	207M	16.3	224M	25.8
Business	616M	542M	(12.0)	585M	(5.0)
TOTAL	\$1,133M	\$1,133M		\$1,133M	

business property taxes, and an increase of only 4% in homeowners' property taxes. In effect, the deduction for homeowners meant that most of the tax increase for the residential sector would be passed on to the farm sector and, to a lesser degree, to the business sector. The objection to the proposal by farm supporters in the House threatened to defeat the bill in Committee, and it became apparent that another solution would have to be found to correct the problem.

HOMESTEAD CREDIT

As House and Senate leaders viewed the problem, the next logical alternative to the deduction approach was a property tax credit. The credit was superior to the deduction because it decreased the tax liability to homeowners, but it did not penalize the farmer or businessman. As a credit, the reduction in residential tax liability would have to come from state funds. The plan's high price tag seemed an insurmountable problem.

The obvious source for the credit funds was the Property Tax Relief Fund. Yet with the projected two-year surplus at only \$340.3 million for the fund, there were not sufficient monies available for a 10% homestead credit and the 2% increase in property tax relief also promised in the 1979 tax package. A 10% reduction in tax liability to homeowners through a credit would cost \$52.3 million each year, while the 2% across-the-board increase would cost \$149 million annually. Obviously the PTRF could not sustain the cost of the homestead credit alone at a 10% level for a long period of time. Funding both programs was out of the question.

The solution to the cost problem was a five-year phaseout of the homestead credit that would begin in 1980, the first effective year of the reassessment. The plan threw out completely the 2% increase in property tax relief credits and substituted, for homeowners only, a 10%

credit in addition to the existing 20% credit paid to all property taxpayers. The homestead credit would be reduced 2% per year until the credit was back to the original 20% level. Analysts anticipate that the assumed increase in individual property tax liabilities resulting from the 2% phaseout of the credit would be offset by natural increases in the growth in assessed valuations. With increases in assessments for personal property and real property improvements running at just over 4%, present homeowners would see only small increases in their property tax bills.

The phaseout would reduce the cost of the program from an estimated \$261.5 million to \$156.9 million, an acceptable level. The phaseout would virtually eliminate the shift in tax burden to the homeowner. Table 4 shows the effect of the 30% credit (10% homestead + 20% PTR).

As the table indicates, under the 30% homestead credit, the assessed valuation ratios would remain the same. For this reason, the tax liabilities for the farm and business sectors would not change. The property tax liability for the residential sector would decline by 14.5% from the reassessment level. This reduction would be absorbed by the increase in state property tax relief.

Through this long process of analysis and negotiation, and by using the PTRF as the source of additional property tax relief for homeowners, the Legislature developed a plan acceptable to most taxpayers. After months of effort, the homestead credit was adopted as the best solution to the complex problems caused by the 1979 general reassessment. Because of variables between counties, the true effectiveness of the homestead credit will be known only after the tax bills are mailed. If the data studies are to be trusted, the General Assembly has substantially defused the reassessment bomb by passing the homestead credit, and has made the future of the Property Tax Relief system more secure.

TABLE 4
Assessed Valuation

	<i>After Reassessment</i>	<i>Percent</i>	<i>With 30% Credit</i>	<i>Percent</i>
Residential	\$ 7,407M	33.9	\$ 7,407M	33.9
Farm	4,002M	18.3	4,002M	18.3
Business	10,462M	47.8	10,462M	47.9
TOTAL	\$21,871M	100.0	\$21,871M	100.0

Tax Levy

	<i>After Reassessment</i>	<i>Percent Change From Prior Reassessment</i>	<i>With 30% Credit</i>	<i>Percent Change From Before Reassessment</i>
Residential	\$ 384M	13.3	\$ 335M	(1.2)
Farm	207M	16.3	207M	16.3
Business	542M	(12.0)	542M	(12.0)
PT Relief	283M		332M	
TOTAL	\$1,416M		\$1,416M	

Property Tax Controls: The Third Generation

SCOTT S. LLOYD

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In 1973 Governor Otis R. Bowen unveiled a program that promised to offer visible, substantial and lasting property tax relief to Hoosier taxpayers. Since 1973 the program has caused the statewide property tax rate to drop from \$10.06 to \$7.45, as shown in the figure below, and has given rebates, totaling \$1,618,797,825.00, to property owners in the form of a property tax credit. The program is not only visible and substantial, but also highly popular.

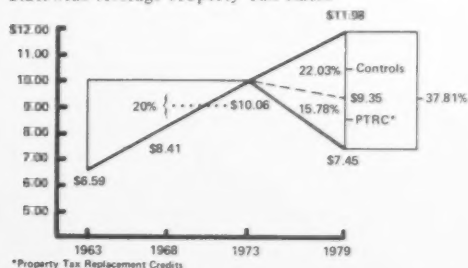
The concepts behind the control package have displayed remarkable durability. Even though the 1977 and 1979 General Assemblies

modified the program extensively, the concept of controlling expenditures by restricting local governments' abilities to raise revenue through property taxes remains unchanged. What has changed is the way that tax levy restrictions are calculated. This article describes the three generations of controls that have existed since 1973.

Originally, the legislature froze all school property tax levies² at their 1973 dollar amount. Increases in school operating revenues came from increases in the state school aid formula. The 1973 General Assembly also allowed counties to adopt a local income tax. If a county adopted the local income tax, the property tax levies for the non-school units within that county were frozen at the 1973 dollar amount. Counties that did not adopt the income tax operated under frozen property tax rates instead of frozen property tax levies. In adopting counties increased operating revenues came from income tax dollars, and in non-adopting counties increased revenues came from applying the tax rate to new and increased property valuations.

In 1977, the General Assembly made a major modification in the way the controlled tax levies were calculated. School levies were still frozen at the 1973 level, but there was no longer the frozen rate/frozen levy distinction among civil units. All civil units' tax levies that included both property and income (if any) taxes would be allowed to increase to 5% in 1978, 8% in 1979, but not at all in 1980. This

Property Tax Relief Achieved by 1973 Tax Package (as amended in 1977 and 1979) as Indicated by Statewide Average Property Tax Rates¹



¹SOURCE: Donald W. Kiefer, "The Tax Package After Three Years" *Indiana Business Review*, Volume 51, Sept.-Oct., 1976, updated with information on 1978-79 property tax valuations, levies, and rates as supplied by the Indiana State Board of Tax Commissioners.

NOTE: The views expressed in this article are those of the author and are not necessarily those of the Indiana Commission on State Tax and Financing Policy or of its members.

² Levies are the funds raised by applying the property tax rate to the assessed value of property.

action assured that the 1979 session would have to take a close look at the nature of the property tax control program in Indiana.

These second generation controls were necessary because of the pending implementation of the revaluation or reassessment of property that was scheduled to become effective in 1979. Under the original set of controls the tax rate of units in adopting counties would fall as the result of a reassessment, (with the tax levy frozen, when the valuation rises the rate must drop). Units in non-adopting counties, on the other hand, would be allowed to apply their frozen tax rate to the increased value and thus be able to generate a large increase in total property tax dollars. This situation would exist only in years in which a general reassessment would take effect.

Power in the 1977 General Assembly was split between the two major political parties. The second generation of property tax controls finally worked out was, therefore, clearly a political compromise. The new controls intentionally included mechanisms that would force the 1979 General Assembly to review the entire concept of property tax controls. Two major features were built in to insure the review. First, the 1980 tax levies could not be larger than the 1979 tax levies. In a high-inflation economy this limit was not realistic. Second, if local government units survived a zero increase in their 1980 budgets, then the budgets thereafter would revert to the frozen rate/frozen levy system characteristic of the first generation of controls.

The mechanisms designed to insure a review of the entire concept of tax controls by the 1979 General Assembly worked. The Republicans regained control of both Houses insuring that the Governor's pledge of lasting property tax control would continue to be met. When the 1979 General Assembly convened, it had two things on its mind. First, the passage of Proposition 13 in California and the resulting wave of taxpayer, especially property taxpayer, resentment made the continuation of some

form of property tax controls a political necessity. Second, the reassessment notices were about to be sent out, thus focusing more attention upon the property tax issue.

The first major question that had to be resolved was how much to allow local tax levies to increase. Instead of dictating a flat percentage, similar to the 5% and 8%, that must be used, the legislature allowed units to use a three-year average in their growth of assessed value as their tax-levy growth rate. In addition, for slow-growing units, the legislature guaranteed that if the unit's growth rate was below the average statewide assessed value growth rate, the statewide figure of 4.56% could be used instead. On the other hand, fast-growing units could not increase their levies by more than twice the statewide average, or 9.12%.

The legislature has always been concerned that only thirty-seven of the state's ninety-two counties have adopted the local income tax. The second generation of property tax controls had included all of the local option income tax revenues as offsets to the property tax levies. This third generation of controls makes adoption of the local income tax more attractive. The legislators allowed revenues in excess of the 1979 receipts that were generated by this tax to be outside the controlled levies, thus giving adopting units more revenue potential.

Another problem for the 1979 General Assembly surfaced. The effective date for use of reassessed values had been delayed once again, until 1980. Revaluation causes property values to rise, but some classes of property increase faster than others. Initial analysis indicated that agricultural property increased in value 77.8% but residential property averaged only a 54.9% increase in value. Initially, the differences in property value increases caused little concern, because the controls limit total expenditures, and no matter how high assessment levels rose, the tax rate would drop to adjust. This works in the aggregate, but reassessment would cause a shift in the property tax burden between classes of property. A govern-

mental unit's tax dollars are limited and based upon the value of each property within the unit. If each type of property went up the same proportion in value, then each property would pay the same proportion in taxes both before and after the new valuation went into effect.

Since the value of agricultural land rose more than that of other types of property, owners of agricultural properties had a greater proportion of the unit's total assessed value and thus a greater portion of the tax liability was shifted to agricultural properties. The owners of real and personal business property, on the other hand, had a lesser percentage of total assessed value and thus reduced tax liabilities. (Personal property is assessed annually. Unlike real property, which was last assessed in 1969 and has one large jump in value, personal property increases in value in smaller yearly steps. Each year personal property becomes a larger percentage of the total assessed value. Then in the year of a general revaluation it drops in its proportion back to a valuation basis equal to real property.)

The 1979 General Assembly, which was faced with how to deal with the tax shift between groups of property taxpayers, agreed to the complex proposal known as the Homestead Credit (or the Vanishing Homestead Credit). Basically, each owner-occupied home, including one-acre farm homesteads, will be eligible in 1980 for a 10% property tax relief credit in addition to the existing 20% tax credit. This credit will be reduced by 2% each year until 1985, when it vanishes. The intent is to cushion homeowners from the shifting effects of the property tax liabilities. The credit declines each year because new assessed value will become taxable each year and thus lessen the burden on existing residential properties. The credit is scheduled to expire in the same year as the next scheduled reassessment is to come into effect.

Through July, 1981, the Homestead Credit will return an additional \$70,930,000 directly to homeowners in the form of additional

property tax relief. The Homestead Credit, however, has turned out to be an administrative headache for the county assessors, who must identify each "owner-occupied" property, and for the auditors, who must calculate the additional tax credit on each tax bill. The assessors' and auditors' problems became so severe that Governor Bowen had to extend the filing deadline by executive order.

The 1979 General Assembly did not ignore the rising costs of local education. In 1973, about 45% of all local non-debt school costs were provided for by the state distribution formulas. By 1979, that percentage had risen to 65%. The legislature felt that this was an appropriate mix of local/state funds and slightly loosened the controls on school levies. Under the new controls, if a school district's enrollment is declining, the general fund tax levy remains at the 1979 level. If enrollment is increasing, the general fund levy may increase at the same rate in this district. The tax rate may be increased an additional $2\frac{1}{2}\epsilon$ or 5ϵ each year to help handle rising costs. All debt service funds and the newly created transportation fund are outside the controlled levies. The removal of transportation costs to a fund outside the controlled levy not only helps, in part, to insulate school districts from rising energy costs but also releases for other uses general fund dollars that had been used previously in the transportation budget.

The third property tax control generation as it now stands should be able to operate for several years without revision. The controls can even take into account the next reassessment, scheduled to be implemented in 1985. In the future there will be changes made in the controls because the composition of the General Assembly will change. But the concept of property tax controls is so popular and so generally accepted by everyone in the state that the commitment made in 1973 to make the controls visible, substantial and especially, lasting has been kept and will undoubtedly continue to be kept for some time to come.



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Business Outlook

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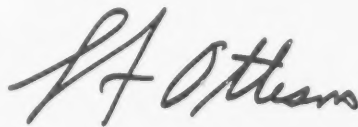
HIGHLIGHTS OF THE OUTLOOK—A MESSAGE FROM THE DEAN

One year ago the Indiana University School of Business Outlook was among very few in the nation forecasting no recession for 1979. We are pleased that our minority view was a reality this year. Inflation and its associated consequences of declining investment and productivity continue. New efforts by the Federal Reserve Board to restrain the inflationary forces in the nation hold hope for 1980, but their price will be a general downturn in economic activity in the early part of the year.

Specific forecasts for automobiles, housing, government spending, and business investment as well as for inflation and interest rates appear in the following pages. This national business outlook has major bearing on the economy of Indiana. Again this year we are pleased to present the views of writers from ten areas in the state. The report from North Central Indiana is more detailed than those previously offered.

The Outlook offered in the following pages suggests a recession for early 1980 with consumer prices continuing to rise in the double-digit range. Unemployment in the early part of the year will rise, but the recession of 1980 will not be as severe as the downturn of 1973-1975. As the year progresses we may expect a decline in interest rates and a general recovery of business activity. The latter will be aided by a reduction in business taxation that will help stimulate investment. In the election year of 1980, consumers may also anticipate a tax break.

This Outlook for the year ahead is realistic without being pessimistic. Fundamental changes in the economy make a sharp downturn unlikely, and a return to moderate growth is anticipated before the year ends. Private efforts, judicious government policy, and international goodwill can make 1980 a better year.

A handwritten signature in dark ink, appearing to read 'S. F. Otteson', with a stylized, flowing script.

Schuyler F. Otteson, Dean
School of Business
Indiana University

1980 BUSINESS OUTLOOK

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The National Economy

INTRODUCTION

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A year ago we went against the vast majority of opinion and argued that there would not be a recession in 1979. Our five major reasons for the no-recession scenario are summarized as follows:

1. The economy had too much steam in 1978 to experience a continuous decline in real output in 1979.

2. The housing market was not nearly as sick as most people thought it would be. (Our forecast of 1.75 to 1.8 million housing starts for 1979 was nearly on target.)

3. We argued that the widespread publicity given the upcoming 1979 recession would set in motion protective measures to offset it as both households and firms braced for recession. (The UAW-GM contract without a strike is just one of the events that fall in this category.)

4. There appeared to be ample liquidity in the economy throughout 1979, and we felt that real interest rates were far too low (they turned out to be negative for a good bit of this year) to curtail spending, and that the kind of liquidity crunch that took place in 1974 would not be in evidence in 1979. (However, we didn't anticipate the October 6 monetary action.)

5. We felt that our foreign trade position would improve substantially over 1978's \$10.3

billion deficit for net exports. Even the \$4 billion deficit for the first half of 1979 improved Gross National Product by \$6.3 billion.

There is no possibility of a recession in 1979 given the conventional definition, since real Gross National Product rose at a 2.4% seasonally adjusted annual rate in the third quarter of 1979 (according to preliminary data.) The real growth figures for the 1979 economy, for the first three quarters of the year, are:

1979:1	+1.1%
1979:2	-2.3%
1979:3	+2.4%

The National Bureau of Economic Research is unlikely to call 1979 a recession year since the unemployment rate has been below 6%, and there was positive real growth in the first and third quarters of the year.

"The most widely heralded recession of recent times," as some analysts called it, didn't come off as scheduled in 1979; *it has been postponed to 1980*. If the Fed had continued to bite the marshmallow, as it had done through September of 1979, we would forecast no recession in 1980. The October 1979 tightening of monetary policy, however, is almost certain to cause the economy to go into a slump in 1980.

The U.S. personal savings rate was only 5% during the first half of 1979, far less than the West German rate of 14%, the French rate of 17%, and the even higher rate of the Japanese. Such savings are a major reason why these economies have experienced greater growth and productivity than our own. Since aggregate saving consists of the combined sav-

ings of households, businesses, and the government, steps must be taken to increase savings in all of these categories.

There are encouraging signs that such measures will be taken. A unanimous report issued by the Joint Economic Committee stresses the need to approach our economic problems on the supply side rather than by traditional Keynesian demand management. (This report is the first the Committee has made in 20 years in which the Democrats and Republicans didn't issue separate opinions). We may see more supply-side economics actually in practice next year, and that will initiate the framework for higher long-term real growth rates. However, the stage is set for 1980 to be a slow year, with negative growth over the first half.

The key to the short-run future of the economy depends upon the recent past and the present posture of the Federal Reserve Board. The Fed allowed the money supply to expand far more than it should have over most of 1979. The target rates of growth for M_1 and M_2 were exceeded by a substantial margin. The Fed's reluctance to admit that the effective supply of money was growing even faster than that added to the excess liquidity in the economy and kept the real rate of interest negative until early October.

There have been very important changes in the financial structure in the last couple of years, and the effective money supply has been bolstered by the addition of money market funds, repurchase agreements between commercial banks and nonbank borrowers, domestic borrowing of Eurodollars, increases in NOW (negotiated orders of withdrawal) accounts, and more widespread use of credit union share draft accounts. All of these have made money easily available.

Borrowing of all kinds continued through third quarter 1979. Then, suddenly, on October 6, 1979, the Federal Reserve shifted its posture from one of extreme ease to one of relative stringency. (We say relative because the moves taken on that date were construed by many

financial experts, particularly non-U.S. bankers, to be far less stringent than the circumstances warranted.) The Fed's "Saturday night special" moves included a new record full-percentage-point boost in the discount rate (from 11% to 12%), and a new 8% reserve requirement against large CD's. The latter had a more profound impact on the financial markets than the discount rate jump, and the prime rate was pushed up rapidly to 15¼% (as of November 2), a U.S. record. More significant was the fact that the Fed stated publicly that it would place more stress on curbing the quantity of bank reserves than it had done in the past, and would place less weight on the federal funds rate, which is the cost of the excess reserves that commercial banks lend one another. If this shift from a "Keynesian" to a "Monetarist" view of monetary policy lasts, it is likely to be one of the most important policy shifts that the Fed has made in the last decade. The discount rate is still quite low. By the end of November it may be raised another full point to 13%. On November 3, the federal funds rate had hit 15½%. If commercial banks are charging that rate to borrow from one another, the 12% rate they can borrow from the Fed is downright cheap.

The Federal Reserve acted on October 6 partially because of the surge of gold prices, but largely because of an error in calculating the money supply. Four and a half billion dollars was erroneously counted as part of the money supply; Manufacturers Hanover Bank had included deposits due other banks, which aren't part of the money supply, as demand deposits, which are part of the money supply, in its calculations. The Fed thought the money supply was growing too rapidly (when it really wasn't) and stepped harder than necessary on the monetary brakes.

The implications of this shift in Fed policy are clear. The new policy will certainly put a serious crimp in bank lending and that will have an immediate impact on small business borrowing, consumer installment credit, and other

short-term loans. Less immediate, but probably more important to the outlook for 1980, is the impact of monetary policy upon both short-term and long-term interest rates. Financial disintermediation, the horror word of 1966-67, 1969-70, and 1973-74, is with us again, and the residential housing market is beginning to decline sharply.

If the Fed sticks to its guns, interest rates will continue to rise to the 15% to 16% level, there will be a rather sharp decline in economic activity (not unlike 1974), and both short-term and long-term rates will start down in mid-1980. At least twice in the last decade, however, the Fed has decided to concentrate on controlling the magnitude of bank reserves. In 1972 it announced that it was going to focus its policy primarily on bank reserves to control the rate of growth of the money supply. It was simultaneously trying to achieve two targets—money supply growth and a target rate for federal funds. Since the Fed has a pretty good control over the latter in the short run, it gave up on the money-supply-growth target. Again in early 1975 the Federal Reserve decided to state publicly its money supply growth targets and try to achieve them, but again the federal funds target won out. Mr. Volcker has given many money watchers the impression that things will be different this time. If the Fed continues to treat the magnitude of bank reserves as the primary target, and to treat the federal funds rate as just another price to be set in the financial marketplace, then interest rates could continue to move up another couple of absolute percentage points in early 1980.

The higher interest rates move in the fourth quarter of 1979 and the first quarter of 1980, the lower they will be in the last half of 1980 and in 1981. If the Fed does cut the federal funds rate loose to find its own market level, short-term interest rates will move up into the 16% range, with long-term rates approaching short-term rates. Tighter money will make any upcoming recession longer and deeper than it would be otherwise.

Now we come to the critical question for the outlook. We cannot forget that 1980 is an election year, and that Congress and the Administration (who have been generally supportive of the Fed changes) may not tolerate a decline in economic activity that substantially decreases their chances of being elected. If the Fed continues to keep the monetary screws on the economy, and if interest rates move toward the 16% level, we think it is quite likely that there will be moves toward non-price rationing. We may see a shift to selective credit controls if interest rates top 16%. Higher down payments for residential housing are already in process, so credit controls, if enacted, will come in the area of consumer installment credit, which has traditionally been insensitive to interest rates. The Fed is going to come under increasing pressure from Congress if it continues its policy of monetary stringency, and Chairman Reuss of the House Banking Committee has been quite vociferous in his opposition to increases in the nominal rate of interest. The Fed can continue to tighten, but will it? That is the \$64 question for the 1980 outlook.

We see two possibilities for early 1980. Either the Fed will let money rates of interest rise to achieve a *real* cost of borrowing of 3-4% (which in a world of 13% inflation means 16-17%), or selective credit controls will be enacted. In either case there is bound to be some contraction in the level of real economic activity through the middle of 1980.

CONSUMER PRICE INDEX

EUGENE A. BRADY

A year ago we expected the rate of inflation to exceed 8%. In our mid-year update of the 1979 outlook we revised that estimate upward to 10%. With the Consumer Price Index reflecting a 13% increase (at a seasonally adjusted annual rate) through the first three quarters of 1979, it appears that our estimates of inflation were

underestimated substantially. However, our forecast was for inflation as measured by the *implicit GNP deflator* rather than the CPI, and through the first three quarters of 1979 the implicit deflator has been rising at about the rate we projected for it at mid-year. We consider the implicit deflator a more accurate guide to the rate of inflation than the CPI, although the latter index is more widely known.

The CPI has two serious problems that make it overstate the rate of inflation. First, it has an upward bias to it since it is a base weighted index, measuring the changes in prices of items that the average consumer purchased in 1972-73. The basket of goods purchased in that period is quite different from the basket of goods and services people are buying today. The CPI overestimates inflation because households tend to substitute less expensive products for those that have gone up more rapidly in price. This process of substitution changes the actual current weights in the index. For example, if the price of coffee doubles while the price of tea remains constant, households will tend to substitute tea for coffee. The fixed-weight CPI index assumes that the relative weights of tea and coffee are unchanged, or that tea and coffee are consumed in the same proportions that they were before coffee prices rose. These unchanged base weights place higher weights on the prices of those products that have had large price increases than would a price index which kept the weights current. Consider two basic components of the CPI. Housing services had a weight of 29.8% in 1972-73; that weight is 17.3% today. Gasoline had a 4.2% weight in the 1972-73 base period; that weight is currently 2.9%. Both of these items have gone up in price much more than the overall rate of inflation, so that the CPI, which uses the old weights, generates a higher rate of price increase as a result of that process.

A second major problem with the CPI is its treatment of housing. The CPI index overemphasizes the costs of new housing and places

less weight on other operating costs involving home ownership. Since only a small proportion of households purchase houses in any given year, the index shows an upward bias when new housing and mortgage costs escalate rapidly—as they have done in the last two years. With new house prices up 17% in both 1978 and 1979, the CPI distorts the inflation rate upward.

The CPI is currently rising at a 13% annual rate, but the implicit deflator shows that prices in late 1979 were rising at a 9.3% rate. It may be of some comfort for our readers to know that we are not really living in a world of double-digit inflation after all!

INFLATION, PRODUCTIVITY, AND EMPLOYMENT

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The Consumer Price Index (CPI) has averaged a 12.5% annual rate over the first nine months of 1979, up from an annual rate of 9% in 1978. Food, energy, and home ownership categories led the rapid rate of inflation in 1979. During the first nine months of 1979 the annual rates of inflation have been 10.2% for food, 51.1% (for gasoline only) for energy, and 13.7% for overall housing costs. Any complete discussion of inflation, however, must also account for the role of overall demand. The discussion which follows takes a closer look at both the special factors and the demand factors that will influence the inflation rate in 1980.

The inflation rate of consumer food items has accelerated in each of the last three years. In both 1977 and 1978, the price of food rose much faster in the first half of the year than in the second half. The same should be true in 1979 though this pattern will not be as pronounced as it has been in the previous two years. Although farm prices have been falling

since April, wholesale food prices dropped for only a few months and began accelerating in August and September. Retail food prices rose slowly in July and August, but picked up substantially in September. Thus, the abatement in food prices for 1979 may already be over.

Weather has played an important role in determining seasonal changes in food prices, but other forces have been slowly pushing rates upward. Government regulations for agriculture, the increasing role and costs of nonfood factors in the food production process, the beef cycle, and the effect of an increased minimum wage have all worked to increase the price of food consumed at home and in restaurants. We expect these trends to continue into 1980 with food prices staying within the 8-10% range.

During the first nine months of 1979 the price of fuel oil and coal rose at an annual rate of almost 56%. In September, the average retail price of a gallon of fuel oil across the United States was 85 cents and that of a gallon of gasoline was 99.8 cents. The *fundamentals* of the energy situation should get no worse than they are now, but there is so much uncertainty about the *politics* of oil that any prediction should be accepted with caution. As our economy slows down and as we implement various long-range energy programs, the demand for foreign-produced energy supplies will slowly taper off. However, given the political uncertainties guiding the short-term availability and price of oil, we believe a safe course to predict is a future similar to the recent past; that means increases of between 30% and 40% in the price of crude oil over the next year.

Increases in mortgage interest rates, insurance, and property taxes were largely responsible for the overall price index of home ownership accelerating in the first nine months of 1979. This increase from the 1978 rate of about 11% was also fueled by increases in the price of houses. With interest rates peaking and with more state and local governments rolling back property taxes, some relief in the price of

home ownership during the rest of 1979 and into 1980 is likely. As new house prices continue to rise, however, there may be little progress in the overall price of home ownership in 1980.

The rise in the price of individual commodities can create significant and sustained inflation only if the dollar value of demand is allowed to increase. Aside from the special factors, if the dollar demand for goods and services rises faster than firms can supply them, overall price inflation results. When demand increases rapidly, manufacturers, for example, are encouraged to add an extra shift, give employees more overtime, or perhaps compete more vigorously for labor and other inputs. Manufacturers might even exploit the situation initially as apparent temporary back orders for products prompt some firms to raise prices without attempting to increase production. In the end, if demand increases faster than output, both output and prices move higher. That seems to be what occurred between 1975 and 1978 as the economy recovered from the 1974-75 recession. From about the middle of 1975 the rate of growth of dollar demand outstripped the normal rate of growth of real output. Until the latter part of 1976 increasing productivity allowed the inflation rate to fall. But as full capacity was approached productivity began to fall and inflation began to accelerate.

By 1978, it was apparent that this economic growth could no longer continue at a rate that was higher than its long-term average. Real GNP still managed to grow at more than a 4% rate in that year, but labor productivity, as measured by output per manhour in the private business sector, was virtually unchanged. This has importance for inflation because the prices of inputs were accelerating while the productivity of labor was declining. For example, hourly compensation in the private business sector rose at a 9.8% rate in 1978 compared to only 8.5% in 1977. Combined productivity and compensation numbers show that labor costs per unit of

output rose at a 9.4% rate in 1978 compared to only 5.8% in 1977. These cost-per-unit increases tend to set a floor for increases in the price of products of the private business sector.

Productivity figures for 1979 are distorted by bad weather and strikes, so the picture looks worse than it really is. However, in the first three quarters of the year, output per manhour in the private business sector fell by more than 1.7% while compensation continued to accelerate; therefore, unit costs in the private sector rose at an 11½% annual rate during the first nine months of 1979. Few people expect this pace to continue much longer, but there is ample reason for compensation costs and, thereby, for unit costs to continue rising at or above the 1978 level. Many groups, in and out of the private business sector, who were surprised by the acceleration of inflation in 1979 and who agreed to compensation increases based on what are now conservative anticipations of inflation, will look to 1980 and beyond as a time to catch up. Even if the recession reduces employment significantly, this catch-up component of wages will keep unit costs from falling very far. In fact, if the recession is milder than we predict, unit labor costs could remain in the double digit range this year and in 1980.

For the near future, the effects of demand on inflation clearly will depend on factors other than the efforts of workers attempting to catch up with inflation. The big uncertainty right now is what policymakers will do as the recession takes hold. In November, inflation is still public enemy number one, but this sentiment could easily change. If the Federal Government tries a quick fix (tax cut) for the economy as soon as a recession begins to tug on the unemployment rate, we can count on there being less slack, and perhaps more importantly, less downward revision in inflationary expectations. A quick demand fix for recession could leave inflation in the double-digit range for some time to come.

How the inflation rate performs in the future depends upon monetary as well as fiscal

policies. Most empirical work suggests a lag of about a year, give or take six months, in the effect of monetary changes on the inflation rate. If this relationship holds for 1979 and beyond, there is ample reason to project less pressure on prices from the monetary sphere. In the six-month period starting from about October 1978 to March 1979, the money growth rate was brought to a virtual standstill. This brought the twelve-month moving average of money growth down into the 4% range, a substantial reduction compared to the 9% rate in the first nine months of 1978. If the Federal Reserve System can keep within its targets for the rest of the year, this monetary reduction should begin to slow demand and have a measurable effect upon the inflation rate toward the end of 1979 and well into 1980. However, if the Fed lets the money supply fuel demand at or above the 1978 rate of money growth, then the benefits gained from October to March will be quickly dissipated.

One caveat is necessary concerning the current growth of the money supply. The general rise in interest rates coupled with the introduction of new financial instruments makes any interpretation of monetary data very difficult. Accounts which transfer funds between checking and time deposits make it virtually impossible to estimate what has been referred to as money, or M_1 . The availability of such highly liquid (and in some cases checkable) assets as money market funds makes the line between money and other assets difficult to locate. These impediments to measuring individual monetary aggregates make it difficult to know exactly how fast the money supply has been growing and what the ultimate effects of this growth will be. However, since most of the monetary aggregates have been growing more slowly this year, there is some evidence for improvement in the inflation forecast coming from the monetary sector.

If we try to put all the pieces together, we see reasons for inflation, measured in terms of the CPI, averaging about 12% next year. That

figure represents some acceleration over the 1978 inflation rate, but an improvement over the rate during the first half of 1979. The latter acceleration was largely the result of increases in the prices of food, energy, and home ownership. Marginal improvements in food costs and in home ownership costs should reduce somewhat the effects of these special factors in the next two years. Much, of course, depends upon OPEC pricing decisions as well as the strength of the U.S. economy. We pointed out that the rate of growth of dollar demand for goods and services affects the degree of inflation any special factor can stimulate. Since we see flat or slowly rising dollar demand over the next year, the effects of the special factors on the inflation rate will be contained. However, in the event that monetary or fiscal authorities stimulate demand too rapidly, in what appears to be a stagnating election year economy, any hopes of containing the inflation rate to even a 12% range will be lost.

Employment levels and the unemployment rate are also affected by special factors and the growth of spending. Since 1975, when the unemployment rate peaked at 9.2%, employment has steadily grown. However, as we approached the full employment condition (in June the unemployment rate equalled 5.6%), increases in real demand and employment began to taper. The growth rate of employment peaked at 4.7% in 1977, fell to 3.6% in 1978, and has dropped to an annual rate of about 1.6% in the first nine months of 1979. Between March and September 1979 the economy failed to create any new jobs, a striking contrast to the 1978 U.S. economy which was able to put an additional 3.6 million people to work.

Although employment gains have been diminishing in 1979, we have not yet seen a significant rise in the unemployment rate. However, as real output begins to fall in the first half of 1980 we also expect to see the level of employment falling. This will lead to a rise in the measured employment rate. Unemployment usually lags output changes. Since we expect

output to bottom out by June, 1980, we predict that unemployment will be rising well beyond June and will not peak until autumn. If OPEC continues to increase crude oil prices in 1980 then the unemployment rate could still be rising as late as December 1980. We predict that the unemployment rate will peak somewhere between 7.5% and 8.5%.

These unemployment rate predictions do have some basis in prior experience. In 1975:2, when the recent expansion began, real GNP growth was positive for the first time in five quarters. Employment growth jumped to a fast annual rate of about 3%. However, the unemployment rate continued to rise because the recovery was also bringing a rise in labor participation. During that quarter alone, the labor force grew by an annual rate of nearly 7.5%.

GOVERNMENT

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Federal Government

In real terms, Federal-Government purchases of goods and services declined almost \$2 billion in 1978 from 1977. In an election year amid growing concern over the status of U.S. defense capabilities—especially in the context of the SALT debate—and the widely held perception of an incipient recession, it is likely that such expenditures in real terms will rise during 1980. In nominal terms, government GNP purchases will rise even faster, not only because of inflation but because of pay increases for the armed services, necessary in the effort to rescue the volunteer armed services policy. Part of such a rescue will depend upon the severity of the rise in unemployment—the bigger the latter, the less the need to raise pay since enlistments correlate closely with the unemployment rate.

Whatever else occurs, it is likely that government GNP purchases will rise somewhat (probably 2-3%) in real terms and sharply (probably over 10%) in nominal terms.

Depending on the depths of the contraction during the fourth quarter of 1979 and the first and possibly the second quarter of 1980, tax rates will be reduced. During an election year, tax rates may be reduced in any event but with an oncoming contraction and the continuing general revolt against "high" taxes, the probability of a tax cut approaches 1.0. Furthermore, the growing recognition that inflation persists even when there is a deficiency of total spending relative to the capacity of the economy to produce, as evidenced by high inflation rates with high and increasing levels of unemployment (a real macroeconomic paradox), reduces the restraint that might otherwise be felt to "hold the line" and reduce the Federal Government's deficit at all costs.

Again, with unemployment rising in late 1979 and early 1980, transfer payments will necessarily increase. It is difficult to believe, therefore, that the overall Federal Government deficit can be held to anything like the \$29-32 billion deficit currently being targeted by the House and Senate for fiscal 1980. On a calendar and national income accounts basis the Federal "stimulus" to the economy has decreased sharply each quarter, from a \$54 billion deficit in 1977:4 to an estimated \$7 billion deficit in 1979:2. A reversal is to be expected, however, during 1980.

The impact of such a deficit reversal for the overall level of economic activity during 1980 will depend upon the timing of the tax reduction, which taxes are cut, and to what extent. The most sensible tax cut would involve social security taxes. Such a reduction would simultaneously lower business costs and raise disposable income and profit margins. It would thus provide a spending stimulus and a restraint on inflation. Concerns over the financial viability of the Social Security Trust Fund will, of course, be voiced. These concerns may get short

shrift, given the likelihood not only of better economic performance in the 1980s but also, and mainly, of funding assurance from general revenues in the event of any shortfall.

In addition to these tax reductions, an increase in the investment tax credit is to be expected for well-known reasons associated with the productivity slowdown and because such a credit appeared to work well in the early 1960s. In addition, personal income taxes will doubtless be reduced on the grounds that if a break is given to business, households must also share.

On the whole, a tax rate reduction in 1980 is likely. But its timing and amount are subject to more than the usual uncertainty.

State and Local Government

In the past, expenditures on final product of state and local governments were the easiest to predict by simple linear extrapolation. However, like so many other aspects of economic relationships in the 1970s, this is no longer the case. "Proposition 13" mania requires something more than a slide rule. In many respects, this component of aggregate demand is more important than Federal Government expenditures. It exceeded the latter by almost 70-90% in recent years in both real and nominal terms. While Federal Government purchases of goods and services in real terms has steadily declined from 12% of GNP in 1968 to 7% in 1978, state and local government expenditures have remained steady at between 12% and 13%. The tax revolt suggests that this ratio may well shrink in the future. However, for 1980, since we project modest or zero real growth, it is unlikely that aggregate state and local expenditures will decline and hence their share of GNP will remain at about 12%. In future years, as real aggregate growth accelerates, the relative importance of state and local spending should decline.

The overall impact of the public sector is thus expected to be mildly stimulating during

1980 due almost entirely to an increase in real defense spending—especially later in the year—and to a tax rate reduction. The timing and lagged incidence of the tax rate reduction will depend crucially on the severity of the anticipated contraction in real output and unemployment.

PERSONAL CONSUMPTION EXPENDITURES

EUGENE A. BRADY

The third quarter 1979 figures for consumption spending were much higher than expected. Consumption spending spurted at a \$53 billion annual rate, more than double the \$22 billion increase registered in the second quarter. Durable goods spending rose \$5 billion in the third quarter, reversing the second quarter's \$5.1 billion decline. Nondurable purchases rose \$21 billion in the third quarter, up sharply from the second quarter's \$10 billion increase. This increase in spending, which came in the face of only \$35 billion in disposable income in the third quarter, indicates that households decreased savings and spent more than they earned. As a result, the savings rate declined from 5.4% of disposable income in 1979:2 to only 4.1% in 1979:3. The current savings rate is the lowest on record in the U.S. since 1951!

Although part of the surge in consumer spending was financed by a lower savings rate, a good bit of it was financed by mortgage debt. The strong surge of consumption spending in the third quarter was partially due to refinancing homes whose prices had escalated over the past several years. The August issue of *Morgan Guaranty Survey* points out that the increased credit made available by home refinancing (about \$50 billion in the last year) exceeded the credit financed through new consumer installment credit! If the Fed is successful in bringing down the rate of inflation, then the amount of funds that can be raised through

refinancing existing housing will tend to fall off, and there will be a slowdown in the amount of prospective consumer credit that can be generated in this manner.

A sharp curtailment of credit, however, will cause housing starts to decline (as we expect), and this will tend to drive up prices of the existing housing stock. Strong excess demand for housing may cause house prices to rise; however, for this to feed back so as to make more credit available, funds for home refinancing would have to be available. We expect there to be a substantial amount of credit rationing in the housing market, and we believe that consumer installment credit will be much tighter next year.

The tightened mortgage market, together with more stringent policies for consumer installment credit, will put a crimp in consumption spending in 1980, particularly during the first half of the year. This is one of the reasons we expect real output to decline next year.

If the rate of inflation doesn't respond to current monetary policy, selective credit controls may be in place by November 1980. We expect that in 1980 controls over down payments on consumer installment credit are more likely than any return to wage-price controls.

AUTOMOBILES

RONALD F. ROST

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Much to the surprise of many observers, the steep decline in automotive output that began last spring has not yet thrown the economy into a recession. On the other hand, sagging automobile and truck production certainly has put a dent in total business activity. In the second quarter automotive output declined by some 12 billion constant dollars, and real GNP dropped by \$8.0 billion. Since then, largely

because of aggressive discounting and cash rebates offered during the summer, unit sales have rebounded somewhat and until recently were running at a \$10.7 million annual rate. At the same time, the second quarter sag in real GNP reversed itself.

It is tempting to argue that without the slump in automobile and truck sales, GNP would have continued its uptrend in both the spring and summer quarters. That argument, however, misses the root cause of our weakening economy. This year's dramatic rise in oil prices has absorbed considerable consumer spending power. If consumers had not deferred their spending for autos and trucks, they would have had to make cuts elsewhere. The only other option for consumers was to dig further into savings, and the savings rate was already far below its historical norm.

If there had been a prolonged automobile strike, the automotive sector's damage to the economy would have been much worse. Perhaps because they feared a recession, negotiators for General Motors and the United Auto Workers came to terms without a strike and avoided putting additional downward pressure on an already faltering economy.

Cutbacks in automotive production in the spring were counterbalanced by consumers' cutbacks in purchases. As a result, an undesired inventory pileup continued, and dealers found themselves saddled with sizable excess stocks. During the summer the inventory buildup ceased, because production was cut by an additional six billion dollars, and sales leveled out in response to the rebates and discounts. Now there is an inventory runoff, but it will have to continue well into next year, unless sales improve, in order to pare down the excess stocks.

We do not look for sales to continue at the recent 10.7 million rate, which was boosted by rebates and discounts. Unit sales of domestics were 8.5 in September, but declined in October, and are expected to dip further in November. One source sees November sales of

domestics at roughly 600,000 units (expressed as a monthly, not annual, rate). If current production schedules, which call for 668,000 units in November, are followed, dealer inventories will increase from 1.75 to 1.80 million cars.

Auto sales will not recover completely until consumers find themselves in a stronger position. As we indicated in our analysis of likely consumer spending, that will not happen for the next few quarters. To date, the introductory sales of 1980 models have been lackluster. Normally, there is a noteworthy boost of sales when new models are introduced, and then sales fall off in the late fall and early winter.

Sales are being held up somewhat by a scrapage rate that is almost 11 million units per year: 9.0 million for cars and a little under 2.0 million for trucks. While only 50% of new truck purchases are for replacement purposes, the corresponding figure for new cars is 80%. The truck industry is a growth industry that depends upon an expanding market. Last year, trucks were selling at an annual rate of 4.0 million units. Because of the spring gasoline shortages, however, production tumbled below 2.5 million. Recent forecasts by Ford and G.M. are for 3.5 million units next year—a figure that is probably too optimistic. Heavier trucks, which are purchased by business rather than consumers, account for only about 10% of unit sales, but represent 33.0% of real dollar sales. Truck utilization, which had been running at 90%, has fallen off, and new orders have declined.

Our spring forecast of constant dollar expenditures by consumers on autos, trucks, and parts was too optimistic. It was made before the gasoline crunch and did not anticipate the stringent monetary policy of Chairman Volker. It now appears that real spending will be about \$55.0 billion in the fourth quarter, and \$53.5 billion for 1980 as a whole. Real spending will be somewhat lower in the first half but will accelerate thereafter, perhaps reaching an annual rate of \$55.5 billion in 1980:4.

BUSINESS FIXED INVESTMENT

RONALD F. ROST

In 1978 business fixed investment grew in real terms by 8.4% and was largely responsible for sustaining the economic expansion into 1979. Then capital spending slowed, declining slightly in the second quarter, at the same time that aggregate real output fell by about 2.3%. Capital spending generally is sensitive to the cyclical behavior of production. Thus, when current capacity utilization rates are declining, or are expected to decline soon, the need to expand capacity diminishes. The anticipated path of the economy over the next few quarters suggests a moderate drop in capital spending during the last quarter of this year and the first half of next year. Aggregate capacity utilization declined by 3.4% in the second quarter, and, in spite of a temporary recovery, operating rates are expected to decline until the middle of 1980.

Those sectors of the economy that are especially sensitive to interest rates—nonresidential fixed investment and housing—have been dealt an additional blow by current record high interest rates. By themselves, the combination of a negative real growth rate and a prime lending rate in excess of 15.0% might suggest a substantial collapse of plant and equipment spending. We do not anticipate such a collapse, however, because we expect new investment incentives in the form of a cut in corporate taxes and additional investment tax credits. These incentives will be helpful in avoiding a prolonged recession, and business and government know that they are necessary if we are to improve productivity in the economy and make headway in the fight against inflation.

Today's policymakers face a dilemma because traditional remedies to fight a recession put additional pressure on prices; therefore, policies that stimulate demand without increasing productivity are inappropriate. The beauty of investment incentives is that they stimulate

demand and increase productivity; hence, they are currently an attractive policy option.

If no investment incentives are forthcoming, our forecast of plant and equipment spending probably will be too optimistic. There appears to be broad agreement, however, that the growing scarcity of fossil fuels as a basic source of energy, stiffer foreign competition, and stricter government regulations to protect the environment and the health and safety of workers, have left us with a capital stock greatly in need of restructuring.

Over the next twelve to sixteen months, anticipated investment incentives will change the composition of capital spending. Construction spending will shrink as a proportion of total nonresidential investment, because investments in equipment can respond more quickly to favorable tax policies. Evidence indicates that construction spending will not take a nose dive, however. Although construction awards have declined, there is still a significant backlog of large projects, especially office buildings. There are also backlogs of demand for agricultural machinery, railroad cars and roadbed, and aircraft. As a result of the decontrol of oil prices, there is a continuing brisk demand by the oil industry for equipment used for exploration and drilling.

We expect a small increase in real capital expenditures in manufacturing, and a small decline in nonmanufacturing industries. Nonferrous metals and aerospace companies are likely to be big spenders, with current dollar increases of more than 20%. Gas utilities appear to be the only nonmanufacturing industry that will increase real spending, perhaps by 2% to 4%. Airlines will have the greatest decline in real spending, largely because of a deteriorating profit picture brought about by soaring fuel prices.

Real plant and equipment expenditures for the whole of 1980 will be almost identical to those for 1979. In both years, spending will come in around 147.0 billion constant dollars.

Capital spending will decline in 1979:4 and during the first two quarters of 1980. Then it will begin a mild recovery, possibly reaching an annual rate of 150 billion real dollars by 1980:4.

Our views are generally consistent with the results of the latest McGraw-Hill Publications Company survey of capital spending plans. Those results show that in current dollar terms, U.S. business plans to increase spending by 9.5% in 1980. In real terms that figure suggests almost zero growth, which agrees substantially with our view, formulated independently of McGraw-Hill's numbers. Actually, our forecast is somewhat more optimistic, because it was made after the massive credit tightening steps taken by the Fed. The McGraw-Hill survey was made before October 6.

RESIDENTIAL CONSTRUCTION

EUGENE A. BRADY

The pattern of housing starts in 1980 is critical to the overall outlook. Instead of exhibiting a swing countercyclical to the overall level of economic activity, as housing did in the first four postwar housing cycles, housing will be cyclic next year. We can expect that the pattern of housing decline in 1980 will be of the same general nature as that of 1974-75. Housing again can be expected to lead the coming downturn in overall economic activity.

What factors caused housing starts in 1979 to be much higher than most housing analysts anticipated? Late last year there was a general consensus that the U.S. would have 1.4-1.6 million starts in calendar 1979, with spokesmen of the U.S. League of Savings Associations and of the National Association of Homebuilders on the low side of those estimates.

The pattern of savings flows and mortgage lending last August is typical of what happened to the housing market during 1979. The flow of funds into savings and loan associations slowed, but the mortgage lending activities of these

same associations escalated. What factors made this phenomenon possible? Four major institutional changes in the housing market allowed more lending with less savings inflows.

1. Lending activity by thrift institutions was not entirely dependent upon savings deposits. Savings and loan associations, particularly, were initiating new mortgages and selling them in the secondary mortgage markets (especially the FNMA and GNMA markets). Packaged mortgage portfolios were also sold to nonthrift institutions, particularly life insurance companies and pension funds. Despite the high costs of mortgage funds, housing and real estate projects were moving ahead. Residential housing and construction for hotels, office buildings, and shopping centers continued at much higher rates than most housing analysts had forecasted.

2. Housing was in strong demand as an inflation hedge, for reasons that we have already discussed. Home ownership provides the household with leverage, subsidies and other benefits. But the main reason for strong demand is that home ownership has never been so cheap. A 12% mortgage in an economy where house prices are moving up at an average rate of 18% is a real bargain. It is far cheaper than a 4% mortgage in the 1950s when inflation was running at less than 2%. Irving Fisher discussed this phenomenon in 1902, and the prospective house-purchaser has pierced the "veil-of-money." The buyer knows what a good investment housing has been with new home prices rising by 17% in both 1978 and 1979. As long as house prices continue to escalate at a rate faster than the mortgage rate, high interest rates will not deter demand. The prime mortgage rate hit 13% in California in late October 1979 for loans up to \$75,000; for more expensive homes a sliding scale of rates goes from 13¼% to 16%! Decreases in the loan-to-value ratio, and the difficulty of obtaining credit, not high interest rates, will curtail housing demand in 1980. We expect that the general pattern of down payments will increase

from 20% to 25-30% or even 40%, as the thrift institutions ration credit. The only way to curtail demand when the real borrowing rate is negative is to hit the prospective customer in his or her "cash-flow," and this is the lending pattern we expect for the coming year.

The demand for housing will be strong throughout the 1980s. The population of 25-34 year old households (which includes the age bracket at which most households make their first home purchase) increased 35% between 1970 and 1978, five times as fast as the overall U.S. population. This trend will continue throughout the '80s, so both household formation and age distribution factors will keep housing demand strong. What will happen to *effective demand* is another question!

3. Housing has been so strong this year because new sources of mortgage funds are being tapped by so-called "conduit" institutions, which purchase pools of conventional mortgages and issue pass-through certificates against them. Many are familiar with Fanny Mae, Ginnie Mae, and Freddie Mac, but what about Maggie Mae (Mortgage Guarantee Insurance Corporation's Mortgage Marketing Corporation), Pennie Mae and Connie Mae? They are all new secondary mortgage market institutions which package up units of mortgages (in \$25-\$100 million per package) and market them as either private or public placements. This institutional change in the mortgage market really got started in 1977 when the Bank of America boxed up for sale some of its own mortgages. So far we are only talking about \$1.5-\$2.0 billion, but \$1.5 billion represents enough funds to finance 25,000 new \$75,000 homes with 20% down.

This trend will continue to increase the scope of the mortgage market next year and in the future. When such firms as Merrill Lynch, Sears Roebuck and Greyhound Corporation are getting into the act, we can expect some \$20 billion in new funds to be generated annually in the near future. That is enough to finance a third of a million new \$75,000 homes.

4. The Federal Home Loan Bank System has been lending funds to the savings and loan associations under its control. Bank Board figures show that the volume of advances outstanding has more than doubled since 1977:3. At the end of August 1979 total Home Loan Bank Advances totaled \$35.9 billion, up sharply from the \$27.3 billion outstanding as of August 1978. This \$8.6 billion in advances will finance a lot of new and existing housing.

Although housing has done well in 1979, we project a decline in residential housing in 1980 because of capital shortages and rationing (by higher down payments) of mortgage credit. Our quarterly estimates for new housing starts in 1980, at seasonally adjusted annual rates, are:

1980:1	1.5 million
1980:2	1.4 million
1980:3	1.6 million
1980:4	1.7 million

INVENTORIES

RONALD F. ROST

For the past few years, we have pointed out that inventory building has been cautious. During the last recession, which began in 1974, businesses were stuck with huge unwanted stocks. Drastic cuts were made in production, but it still took over a year to run off the excess. Inventory investment was a negative 12.0 billion constant dollars in 1975. This substantial disinvestment was accompanied by a surging unemployment rate, which reached 8.8% by mid-1975. Memories of that experience have faded slowly and business has sought to prevent any substantial increases in inventory-sales ratios. For that reason, the dimensions of this inventory cycle will not begin to approach the 1974-1975 experience.

We do expect final sales to decline in the fourth quarter of 1979 and during the first half of 1980. Because inventory stocks have been

generally lean, however, and because the runoff will be smaller, resulting production cuts and layoffs will also be smaller.

The inventory-sales ratio has risen this year, mainly as a result of the decline in sales of automobiles and trucks and of supplies used to make them. Inventory investment proceeded at an annual rate of 18.1 billion constant dollars in the second quarter, but it has fallen off since then. Largely because of the automobile and truck liquidation that began this summer, inventory buying has declined roughly one third from where it was in the spring.

We reported above that auto industry sales have been disappointing this fall in spite of the introduction of new models. Detroit cut back domestic production again in November, but current sales forecasts imply an increase in dealers' inventories of 250,000 units. If sales remain weak, some additional unwanted inventory will pile up in the auto industry. The excess is not likely to be serious, however, as long as production levels are being held down. November production plans for levels 21% below those of a year ago will be cut further if necessary. For that reason, even though autos had an important effect on inventory movements in the spring and summer, we doubt that weak auto sales will cause a sizable additional jump in the aggregate inventory stock in the fourth quarter.

Other inventory buyers also are exhibiting restraint. Earlier in the year, steel users did some stockpiling, but now shipments have slowed. Despite a decline in new orders, there are still substantial order backlogs for machinery and other capital equipment. The recent increase in soft goods stocks is no problem because much of it has taken place to restore the supplies of food manufacturers and oil refiners. In fact, the oil stocks of producers and refiners are approaching their peak levels of two years ago. Clothing orders have been restrained, and clothing stores report tight stocks.

Last spring we indicated that some inventory building might be motivated by the desire

to beat price increases. In the present environment, however, with a likely recession just ahead and with interest rates at record highs, there is little incentive to hold speculative stocks. The carrying costs are prohibitive, and the risk of a decline in demand is too great.

The outlook for 1979:4 and for all of 1980 is for negligible to moderate levels of inventory investment. In 1978 real inventory spending was 14.1 billion dollars. For 1979 it will average about \$11.5 billion, although the annual rate in the fourth quarter will be down to something like \$4.0 billion. In 1980:1 real inventory spending will be close to zero as businesses strive to get stocks in line with dampened sales. As the economy slowly recovers, inventory spending will pick up moderately in the later quarters, averaging around 4.5 billion real dollars for the entire year.

INTEREST RATES AND CREDIT

LAWRENCE S. DAVIDSON

John Maynard Keynes pointed out long ago that interest rates are a highly psychological phenomena and are subject to wild oscillations which accord with the changing moods and expectations of the public. The experience of the 1970s certainly supports his conclusions. In

mid-1973, the federal funds rate (the interest rate banks charge each other for loans) stood at about 5½%. In the next year it rose to almost 12%, and in the following nine months it fell back to about 5.2%. Thus, in a period of less than two years, this interest rate changed by well over 1,000 basis points.

We have witnessed a similar turn of events during the last two years, though we have yet to see rates come down. The following table shows the changes in basis points (100 basis points equals 1%) of selected short- and long-term financial instruments from January 5, 1978 to October 12, 1979:

	<i>basis points</i>
THREE MONTH TREASURY BILLS	582
FEDERAL FUNDS RATE	531
90-DAY CD'S	598
4-6 MONTH COMMERCIAL PAPER	636
AAA CORPORATE BONDS	156
LONG-TERM TREASURY BONDS	179

Before discussing how interest rates will change over the period ahead, we need to look at how we got to where we are now. In the past, interest rates behaved very much like an engine's temperature gauge. When the economy ran at a fast rate and the demand for credit was rising rapidly, interest rates increased, signalling that the supply of credit was insufficient to meet the needs of the economy. If the Federal Reserve responded by increasing the supply of credit, the gauge usually moderated by falling back or rising more slowly. However, in 1978 and 1979 a rise in the supply of money pushed interest rates even higher. The difference in this period has been the accelerating inflation rate and the nexus between increasing economic growth rates, monetary growth rates, and anticipated future inflation. Federal Reserve increases in the money supply have been interpreted as signals that inflation was going to rise even faster in the future. This anticipation makes real interest rates shrivel, saving less attractive, and anticipatory (or advance) buying seem highly rational. Hence, increases in the money supply directly increased the demand for credit.

In 1978 consumers led the borrowing band. They apparently have passed the baton to the business sector for 1979. In 1978, total funds borrowed in credit markets equalled about \$395 billion, up from about \$340 billion in 1977. While business loans were rising by about 15% in 1978, consumers' installment debt increased by nearly 20%; led by a 24% increase in auto debt. In 1979 the situation reversed. In the first six months, consumers, burdened by inflation-eroded real incomes and high debt-

payout ratio, added only about 12% to installment debt. Businesses, however, were increasing their borrowings at a 20.6% rate in order to cover the expenditures of slowly moving inventories and previously planned capital expansion.

By the spring of 1979, most economic forecasters were predicting a recession for the year. It appeared that the combination of slow economic growth, a recently tightened money supply, and reduced inflationary expectations had begun to break the momentum of the rapidly rising interest rates. However, by summer the increases in energy prices and the Fed's loosened grip on the money supply began to drive interest rates slowly upward in anticipation of a new surge in inflation. Then, on October 6, the Fed announced a new program of tighter monetary control which sent tremors through the financial community. Interest rates surged and, by the middle of October, the prime rate had jumped from 13½% to 15¼%.

We believe that interest rates are at or very near their peak now, and that sometime during the first quarter of 1980 interest rates will begin to fall. The expectation of negative real growth rates of output during the first half of 1980 and a belief that the Fed will reach and maintain their goal of a reduced growth rate of the money supply will lead the public to expect the inflation rate to fall. Even if the Federal Government increases its borrowing in 1980, the continued slump in auto and housing sales and some reduction in capital spending, will keep the overall demand for credit from exceeding the 1979 level.

More specifically, our assumptions concerning fiscal policy, energy prices, and the 4-8% growth range for M_1 (currency and demand deposits) imply a significant reduction in short-term interest rates by the middle of 1980. The prime rate should fall back to about 13% by June and to about 10% before December. Even though more time is needed to reduce long-term rates, we anticipate a reduction of 100 basis points by 1980:4.

NET EXPORTS

EUGENE A. BRADY

The net export sector has registered favorable gains throughout 1979, and the nation's trade position should continue to improve in 1980. After a lag of two years, the persistent weakness of the dollar is finally beginning to pay off. One of the major benefits of a lower price for the dollar on world markets is that the price of our exports to other countries falls, and our imports from other countries become more expensive. The decline in the value of the dollar should provide a strong stimulus to the net export sector. In the third quarter of 1979, the U.S. was running a trade deficit of \$5.3 billion. Even though it is quite likely that the OPEC cartel will increase petroleum prices next year, we expect that the deficit will be almost eliminated in the fourth quarter of 1979 and that a trade surplus of approximately \$5 billion

will be generated during 1980.

The surplus will be generated in two major categories of commodities, capital goods and agricultural products. Most people think that our trade surplus would be mainly in the agricultural sector, but the surplus in capital goods was more than two and a half times as great as in agricultural products over the last few years. This tendency for capital goods to play a larger role than agriculture in the net export picture will continue throughout 1980.

U.S. exports have been increasing steadily over the last few years, but the share of world trade accounted for by U.S. exports has been declining steadily over the last decade. In 1967 our exports came to 17% of total world trade. By 1973 they had declined to 14%, falling still further to 12% in 1978. The devaluation of the dollar will finally improve the competitive position of our exports, and this fraction of world trade represented by U.S. exports should stabilize at about 12%.



The Indiana Economy

MORTON J. MARCUS

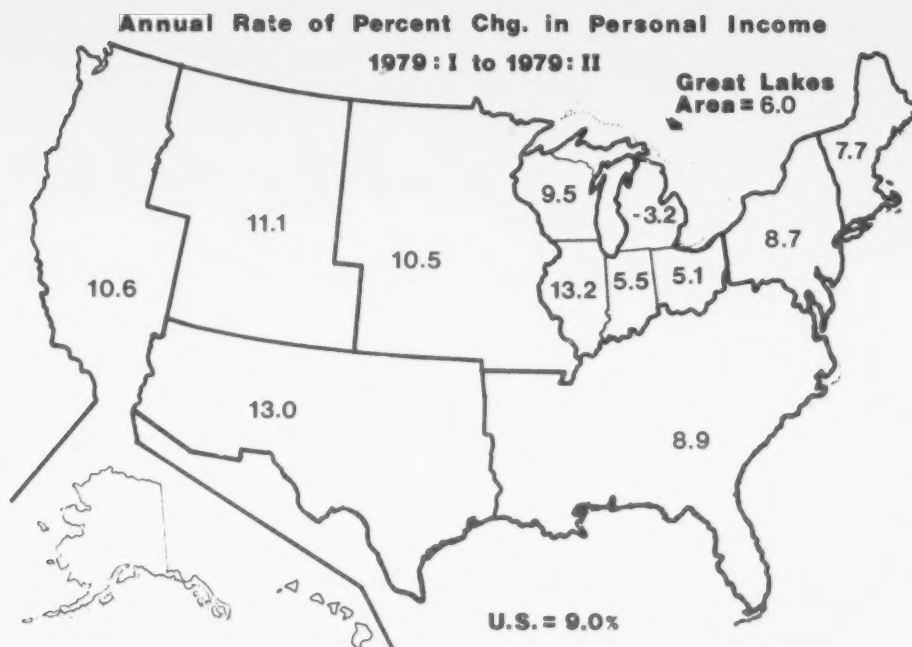
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Indiana faces some additional declines in economic activity during the first half of 1980. The state has already experienced a decline in 1979 because of the downturn in automobile sales. Unemployment has risen, employment gains have moderated, and personal income gains have lagged the nation.

The second quarter of 1979 was particularly harsh for the Great Lakes states (see accompanying map and Table 1). Whereas the entire nation had an advance in *nominal* personal income of 9.0% (seasonally adjusted annual

rate), the Great Lakes region trailed with only a 6% increase, the lowest of eight regions in the nation. Michigan, Ohio and Indiana, the states with economies most closely tied to automobile production, were hardest hit.

Not only the automobile downturn affected Indiana. Farm proprietors' income was down sharply as prices paid by farmers rose rapidly relative to prices received for their products. This pattern seems to have hit Indiana farmers harder than those across the nation (see Table 2). Wages and salaries in the state



grew by just 3.4% compared with an 8.0% increase nationally. Other areas (notably wholesale and retail trade) fell behind the national growth rates. In durable goods the decline was 5.3%.

An early output of the newly developed Indiana Econometric Model indicates that *real* personal income for Indiana will fall by 1.1% between the second quarter of 1979 and the first quarter of 1980. Thereafter a rise of 3.1% is expected to bring *real* personal income to \$28.7 billion in the fourth quarter of 1980 (that would be approximately \$52.2 billion in current dollars). We hasten to note that these forecast values are from a model that is being developed by members of the I.U. School of Business faculty. With the prospects of a turnaround in the year ahead, the numbers produced by the model must be used cautiously. As we gain experience with the performance of the model, our confidence in its results will grow.

TABLE 1
Personal Income, Second Quarter 1979
(Seasonally adjusted at annual rates)

	\$ billions	Percent Change From	
		1979:I*	1978:II
United States	\$1,883.3	9.0%	12.1
REGIONS	—	—	—
New England	105.6	7.7	10.5
Midwest	378.3	8.7	10.3
Great Lakes	370.0	6.0	10.6
Illinois	110.3	13.2	11.2
Indiana	45.4	5.5	11.3
Michigan	82.5	-3.2	7.6
Ohio	92.9	5.1	11.7
Wisconsin	38.9	9.5	12.0
Plains	144.5	10.5	13.1
Southeast	370.4	8.9	12.7
Southwest	164.7	13.0	14.7
Rocky Mountain	50.9	11.1	14.5
Far West**	298.9	10.6	13.7

* Annual Rate

** Includes Alaska and Hawaii

Source: U.S. Bureau of Economic Analysis

TABLE 2
Growth of Personal Income Components
Annual Rates for Second Quarter 1979

	<i>Indiana</i>	<i>United States</i>
Total Personal Income	5.5%	9.0%
Transfer payments	12.0	11.2
Dividends, interest, & rents	12.3	11.8
Proprietor's income		
Non-farm	3.0	2.9
Farm	-26.1	-5.0
Wages & Salaries	3.4	8.0
Construction	28.3	23.7
Manufacturing		
Non-durable goods	4.0	6.7
Durable goods	-5.3	3.6
Transportation & public utilities	4.3	2.5
Wholesale trade	5.8	10.5
Retail trade	3.3	6.3
Fin., Ins., & Real Estate	6.3	9.3
Services	11.2	9.2
Government	7.7	7.6

Source: U.S. Bureau of Economic Analysis

At this point, the Indiana Econometric Model indicates a growth of 2.0% in Hoosiers' real personal income for 1980 and an increase of 14,000 jobs by the end of the year. This employment gain will not offset an increase in the labor force, and the annual average unemployment rate is expected to be between 7½% and 8%. During the early part of the year, and in selected counties, considerably higher rates may be anticipated.

In the following pages the expectations of Outlook writers from each of ten areas are presented. The diversity of their views mirrors the diversity of the economic base within the state.

INDIANAPOLIS

ROBERT J. KIRK

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This forecast makes some basic assumptions: initially, production and employment will feel the effects of the current restrictive monetary policy; price level will be affected only after a lag. A rising national unemployment rate will cause the household savings rate to rise and expenditures for consumer durables to fall. We shall, therefore, have a period of stagflation—little growth of the economy and inflation continuing at the 9-10% level—in the first half of 1980.

In one sense we are experiencing a two-stage contraction similar to the 1973-75 period. The OPEC oil embargo in November 1973, caused a supply-induced contraction. The fear of shortages encouraged purchasing agents to stock up on inventory. Then demand fell in September 1974, and we had a more traditional demand-induced inventory recession with the trough occurring in March, 1975. This year's gasoline shortage caused a supply-induced contraction again and resulted in a reduction in automobile and automobile-related employment in Indianapolis in the second quarter. The local unemployment rate rose above the U.S. rate.

To forecast the 1980 economy for Indianapolis we start with the assumption that we have already had a supply-induced contraction. The question is, How much more will an industry-diffused, demand-induced contraction reduce business activity? Unemployment in the automobile industry has already reached about 80% of its level in the 1973-75 recession. Therefore, although there is the possibility of further contraction, we have already traveled much of the adjustment path.

The income of unemployed auto workers has been maintained by Supplemental Unemployment Benefits, unemployment compensation, and food stamps. However, many of the 1,400 unemployed Chrysler workers (those with less than ten years seniority) do not receive SUB but could receive benefits under the Trade Act of 1974, which provides aid to American workers who lose jobs because of

foreign competition. The weakness in the automobile industry is reflected in retail sales, which peaked in May 1979.

In 1973-75, we had a "V-shaped" recession nationally—a sharp contraction followed by a strong recovery. This time we expect Indianapolis to have a less severe but more protracted recession. The two sectors of the Indianapolis economy that tend to be highly cyclical are automobiles and construction. We have not yet had a contraction in the latter and so will look more closely at it.

Residential Construction

Apparently 1977 was the peak year in housing permits. Permits were issued for 9,000 units that year, and 80% of the permits were for single-family dwellings. In 1978 permits for about 8,000 units were issued; about 70% of them were for single-family dwellings. Through August 1979 permits were down slightly from 1978. Multi-family units were down significantly until July and August when permits were issued for some large projects.

What about 1980? Single-family units are forecasted to be down about 30% from 1978. Conventionally financed multi-family units will be very limited. In past recessions when builders had difficulty obtaining adequate mortgage money for conventionally financed units, they went to Section 235 and 236 financing. Today the primary federal housing-assistance program is Section 8. In FY1979, there were about 360,000 Section 8-assisted units nationally. However, in FY1980, as part of a federal budget tightening move, the number will drop to 300,000, a 16% drop. Therefore, federally-assisted financing will not serve as a cushion as much as before.

With some conversion of apartments to condos and with low vacancy rates for apartments, we expect that there will be some upward pressure on rents. Certainly the underlying long-run determinants of housing demand remain strong.

Office Space

In suburban areas, about 700,000-800,000 square feet of speculative office space is being constructed. This amount appears to be enough, perhaps more than enough with a softening of the economy, to meet demand. Downtown, the inventory of first-class office space is vanishing. By the time the thirty-seven story American United Life Building is completed in October, 1982, its office space should be readily absorbed.

Light Manufacturing and Warehouse Space

About 500,000 square feet of speculative light manufacturing and warehouse space, for which financing is committed or for which construction has started, will be available for leasing in the spring. For the second half of 1980 the amount of speculative space is less assured because of the uncertainty of financing at this time.

Public Construction

About \$43 million of the projected \$220 million construction project for a waste-water-treatment facility will take place in the first half of 1980. During 1980, \$45 million in construction will occur at Indiana University-Purdue University at Indianapolis.

In conclusion, the automobile industry has contracted. Some contraction is expected in other durable goods industries and in construction. However, chemicals, finance, insurance, and services are important sources of employment stability. The structure of the local economy has been shifting toward the more stable nonmanufacturing sector, reducing the amplitude of cyclical fluctuations. Although government employment was countercyclical in the 1973-75 recession, we do not expect it to be so to such an extent in 1980. Therefore, we expect stagflation in the first half of 1980, and we hope that a short housing cycle will lead the recovery in the second half.

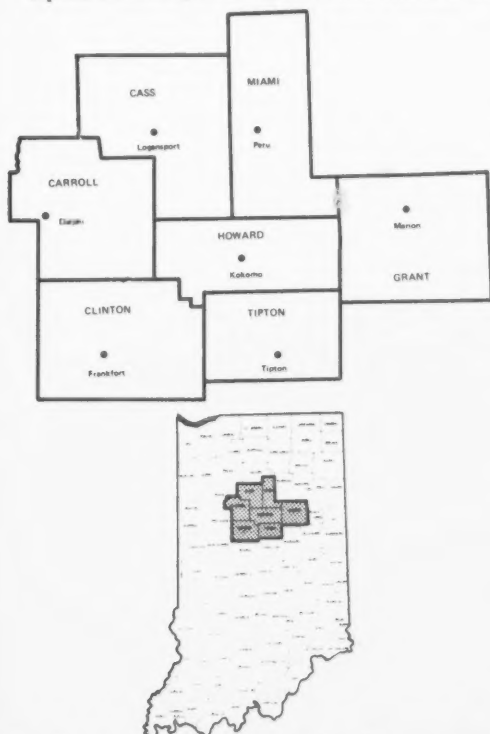
KOKOMO-MARION

DILIP PENDSE

*Professor of Economics
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This analysis is confined to the seven-county North Central Region of Indiana (see accompanying figures). This region, comprised of Cass, Carroll, Clinton, Grant, Howard, Miami, and Tipton Counties, accounts for about 6% each of



Indiana's population, its labor force, its total employment, its total payroll, and its total establishments.

Howard and Grant Counties, the two giants, the industrial hubs of the region, account for 53% of the region's total establishments, 55% of its population, 65% of its retail

sales, and 75% of its total payroll. Nearly 18% of the jobs in Howard County are held by people living in the neighboring counties. On the other hand, nearly a third of the employed people from Tipton and from Carroll Counties, the bedroom communities, hold jobs in the neighboring counties.

In 1977, small establishments having nineteen or fewer employees comprised 89% of the region's 5,590 establishments. Small establishments form the backbone of the economies of Tipton and Carroll Counties by providing 50% of the nonagricultural jobs. In Cass, Clinton, and Miami Counties, small establishments provide 30% to 40% of the area jobs. But in Grant County small establishments provide only about 25% of the jobs, and the percentage falls to 20% in Howard County.

The economies of Howard and Grant Counties depend heavily on the manufacturing sector. Howard County's manufacturing sector accounts for nearly 62% of its total establishment employment. Nearly 56% of Grant County's total establishment employment comes from the manufacturing sector. Since salaries and wages per employee are highest in the manufacturing sector, annual payrolls in these two counties account for a very high proportion of total payrolls in the North Central Region.

Howard County is one of the most affluent counties in the state. Currently, the effective buying income of 71% of the households in Howard County is \$15,000 or more. In 1978, Howard County's per capita income ranked second and median household effective buying income ranked third in the ninety-two counties of Indiana.

Major Developments in 1979

In the first ten months of 1979, the following major positive developments took place in Howard and surrounding counties:

1. Chrysler Corporation began work on a \$120 million addition to the existing plant in Kokomo.

2. Delco's \$11 million plant expansion program made significant progress.
3. Stellite Division of the Cabot Corporation announced its \$10 million expansion plan to double the capacity of its cold-strip mill in Kokomo.
4. Penn-Dixie Steel Corporation disclosed its intentions to rebuild its rod mill in Kokomo at a cost of \$40 million.
5. Kokomo Economic Development Commission agreed to provide revenue bond money for
 - the construction of 120 apartment units in the Liberty Manor subdivision,
 - the construction of a skating rink, and
 - the opening of another K-Mart shopping center.
6. Several business and government leaders in Tipton county met to discuss the question of how to attract industry to the area.
7. Cass County's Ad Hoc Committee on Population made thirteen recommendations on how to reverse the downward trend in Cass County's population.
8. Cellusuade Inc., a flocking machine manufacturing company, opened its plant in Logan-sport in Cass County.
9. In June 1979, Southern Strip Steel opened its plant in Peru and created an estimated sixty-five jobs in Miami County.

The following negative developments must also be mentioned:

1. In August 1979, World Color Press in Kokomo permanently closed its doors, causing 500 people to lose their jobs.
2. Chrysler Corporation laid off indefinitely a third of its 6,700 employees.
3. In March 1979, Kokomo lost its air commuter service to Indianapolis, Chicago, and Detroit.
4. Gossard, a garment manufacturer in Logan-sport, closed its operation, causing seventy-five people to lose their jobs.
5. Memcor, a division of E-System Inc., closed its plant in Peru, causing a loss of 137 jobs in Miami County.

Outlook for 1980

What is the outlook for 1980? Many of the plant expansion programs started or approved in 1979 will be completed in 1980. These expansion programs will increase the productive capacity of existing plants and will provide additional jobs or work hours for area residents. Despite apparent strengths in the operations of Delco, Stellite, and Penn-Dixie, the performance of the North Central Region's economy will largely depend on answers to the following questions:

1. *How deep will be the national recession?* A deep recession could hurt the auto, steel and related industries. Kokomo and the surrounding areas will feel ripple effects of a downturn in the auto and related industries.
2. *How long will the recession last?* A mild or moderate but prolonged recession could slowly but surely hurt the region's economy.
3. *How soon will Chrysler Corporation receive badly needed financial aid from the federal or state government or from other sources?* A recession at the national level and longer delays in granting financial aid to Chrysler Corporation could give this region, especially Howard County, a one-two punch. The longer it takes to receive aid, the more severe the consequences. Already Chrysler's lay-offs have caused Howard County's unemployment rate to climb to 11%. Many of the laid-off workers, who are currently surviving on reduced supplementary funds from Chrysler and on state unemployment benefits, will lose their state unemployment benefits after 26 weeks.
4. *How strong will be the demand for area products in foreign markets?* A downturn in foreign demand for area products could eliminate some jobs in export-oriented establishments.

TABLE 1: North Central Region's Economy in 1980: A Capsule Summary

County	Population (thousands) ¹	Unemployment Rate ²	Effective Buying Income ³		Retail Sales (millions) ³
			Per Capita	Per Household	
Carroll	17.9	4.4 - 7.5%	\$7,757	\$21,881	\$ 36.8
Cass	39.1	6.0 - 12.1	6,872	18,858	186.3
Clinton	30.9	7.0 - 10.6	8,466	21,658	101.5
Grant	83.5	9.0 - 13.2	7,757	22,448	315.9
Howard	90.0	8.0 - 17.3	9,520	27,514	615.9
Miami	39.1	7.0 - 14.0	6,133	16,911	90.9
Tipton	15.9	6.0 - 11.7	8,594	23,426	36.7
North Central Region	316.4	7.3 - 13.6	-	-	1,384.0

¹ Based on population projections made by the School of Business, Indiana University, Bloomington.

² Depending on severity of recession and how soon Chrysler Corporation receives financial aid.

³ Based on past estimates prepared by *Sales and Marketing Management*.

The probable economic performance of the North Central Region is as follows (see accompanying table):

Population: Total population of the region will reach 316,400.

Employment: The unemployment rates in the region will vary from county to county. The effects of recession and continued Chrysler layoffs will be felt by all counties. Employment will drop in auto, home building, and transportation industries. Prolonged recession could result in layoffs in fast food and service industries. Small businesses will cut back on or simply freeze new hirings. Blue-collar male workers, minorities, females, young people and teenagers will bear the brunt of an economic slump.

Nonfarm Income: Although incomes will rise because of two-income families, inflation, and higher wage contracts, the rate of increase in income will be lower than in recent years because of layoffs and reduced overtime work.

Farm Income: Strong world demand could keep area farmers' incomes high.

Retail Sales: Although dollar volumes will be high because of inflation, consumption spending will be dampened by layoffs, reduced overtime, and an uncertain future. Demand for

such goods as appliances, TV sets, radios, and automobiles will be lower than before. People will defer such purchases until the economic picture brightens.

Housing and Construction Market: As a consequence of high interest rates, increasing costs of labor and material, and reduced demand for homes, there will be (1) a slowdown in the construction of new houses, (2) an increase in the average time required to sell either new or existing houses, and (3) a reduction in home improvement expenditures.

Business Expansions: Small business establishments are likely to defer their expansion plans until the cloudy economic atmosphere becomes somewhat brighter.

Overall, the North Central Region's near economic future is clouded with uncertainty. This region's economy is very sensitive to national economic trends and is heavily dependent on the manufacturing sector. When the manufacturing sector sneezes, the region's economy catches cold! A near replay of the 1974-75 recessionary slowdown might force leaders, planners, and citizens to consider diversifying the economic base or making economic development plans for the entire region in order to avoid future seesaw growth patterns.

TERRE HAUTE

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Tomorrow's Terre Haute weather can be forecast tolerably accurately by looking at Saint Louis today and adjusting for a climate that is slightly less warm and slightly less wet. Future clothing styles may be anticipated by looking at New York or California designs, but observing that fashions become muted and more sensible when they arrive here.

Turns in employment and output in Terre Haute also tend to lag the national economy, but the amplitude of swings tends to be less extreme. During the last recession the national unemployment rate stood at 4.8% in September 1973; a year later it climbed to 5.9%; and for calendar 1975 it averaged 8.5%. In contrast, the rate actually fell in the Terre Haute SMSA between September 1973, and September 1974—from 5.0% to 4.4%—and for calendar 1975 it averaged 6.8%. We should not expect radical changes in the employment level or in the price deflated income of the Terre Haute area for 1980.

Relative stability in local business activity stems, at least in part, from low reliance on durable goods manufacturing—15% of establishment employment in the Terre Haute SMSA, as opposed to 25% statewide. Virtually none of that activity is directly related to the automotive industry.

The employment situation has deteriorated over the past year, however, and the deterioration has been in manufacturing. By August, the seasonally adjusted unemployment rate, 6.6%, slightly exceeded the national average. In Clay County, which has the highest area unemployment, jobs created by some new industry have been more than counterbalanced by job losses

in mobile homes manufacturing and in the clay and brick industry. The Quaker Maid facility of A & P has closed in Vigo County. That county's single biggest employer, the Record and Columbia House Divisions of CBS, has been hit by the well-publicized slump in record buying. This year's unemployment increase seems to be largely the result of random shocks, and does not seem to presage further manufacturing setbacks for 1980.

Agriculture is often a source of instability in local business conditions. Local merchants and farmers are cheered by a most unusual combination of a good harvest at good prices.

Construction activity also affects local business conditions. Industrial construction in the area should remain at historically high levels through 1980. Three massive, ongoing industrial projects dominate the local scene; Eli Lilly in Clinton, Hercules in Terre Haute, and the REMC generating complex at Merom Bluff. Residential construction will be buoyed by the conversion of the Terre Haute House into housing for the elderly and by the construction of a Westminster Village retirement community. Single-family residential construction is another story. Seventeen percent construction loans and 13½% mortgages *have* hit Terre Haute. Those not actually squeezed out of the housing market *are* having second thoughts. Construction permits in Vigo County *did* fall about one third on a year-to-year basis even before the recent jump in interest rates. Any recession in the housing industry in 1980 may well affect Terre Haute, but the industrial expansions will keep overall construction figures high.

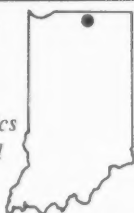
Consumers' concerns about inflation, high interest rates, and a possible recession have made them cautious. Real estate and automobile sales, which held up quite well through the twists and turns of rising interest rates and gasoline shortages, fell dramatically, roughly coincident with the October announcement of the change in Federal Reserve policy. General merchandise sales, particularly of big ticket

items, have been low. Sales will remain low in 1980. The Terre Haute area shared the national inflation, and was affected by some rise in local unemployment in 1979. Although 1980 is unlikely to be better, it is also unlikely to be much worse.

SOUTH BEND—ELKHART

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Economic activity in the South Bend area has continued to moderate since exhibiting unexpected strength in the first quarter of 1979. Conditions are more on the critical side in the Elkhart area because of a significant reduction in the nation's demand for recreational vehicles and related products. The RV industry is a major component of Elkhart's industrial sector.

Tables 1 and 2 give various indicators of local economic activity for the South Bend and Elkhart communities. The figures contained in the tables are seasonally adjusted and, with the exception of the unemployment rates, are index numbers expressed as a percentage of 1967 base year values.

South Bend Table 1 shows that industrial electricity sales and commercial and industrial natural gas sales were at comparable levels in August 1979 and August 1978; however, the latest index numbers in each case are significantly lower than both year-to-date averages and peak values attained in the first quarter of this year.

Minimal change is noted when August 1979 employment data indices are compared with year-to-date figures and average performance in the previous year. Recent reductions in employment, however, caused the South Bend SMSA unemployment rate to increase dramatically in July and August. The August figure of 6.8% was a full percentage point above the 1978

average and more than two percentage points higher than the 4.6% level of February 1979.

An automobile and housing market decline, mirroring similar national trends, is an important factor in the softening of economic activity in the South Bend area. Recent auto and truck sales indices are at their lowest levels since the 1975 downturn and are about 35% below the levels of just one year ago.

The volume of housing activity peaked in the fourth quarter of 1978. The year-to-date index of new housing permits issued in August 1979 was some 40 index points below the average obtained for calendar year 1978.

In summary, indicators covering the twelve-month period ending in August 1979 suggest that South Bend is experiencing: a softening in the sales of energy to local businesses; a significant increase in the unemployment rate; and substantial reductions in auto and truck sales and in the number of new housing permits issued.

Elkhart Table 2 gives selected economic indicators for the Elkhart area. As in South Bend, the level of sales of industrial electricity and commercial and industrial natural gas in Elkhart was comparable for August 1979 and August 1978, but the most recent index numbers are well below year-to-date averages and the peak values reached earlier in the year.

Employment and unemployment data trace a similar pattern of decline through the last six to eight months. The August unemployment rate in Elkhart, 10.0%, was some six percentage points higher than the lows of 4.1% reached in January and February 1979. This very large increase results, for the most part, from a major reduction of activity in the recreational vehicle industry. Two thousand seven hundred fewer members of Elkhart's 73,600 member work force were employed in the RV industry in August 1979 than in August 1978.

Data covering auto and truck sales in Elkhart are not presently reported through IUSB's Bureau of Business and Economic Re-

TABLE 1
SELECTED INDICATORS FOR SOUTH BEND (Seasonally adjusted: 1967 = 100)

Indicator	Average 1978	Average Jan.-Aug. 1979	August 1978	August 1979	Percent Change Aug. 1978-Aug. 1979
Industrial electricity sales ¹	106.9	128.5	110.4	120.0	8.7
Natural gas sales ²					
Commercial	140.1	149.1	135.7	133.8	-1.4
Industrial	88.9	100.8	89.6	89.4	-0.2
Employment Data ³					
Nonagricultural employment	113.5	119.3	113.1	118.2	4.5
Manufacturing employment	91.9	94.9	92.9	94.1	1.3
Nonmanufacturing employment	127.0	134.6	125.6	133.4	6.2
Help wanted index ¹	166.4	147.0	178.7	122.8	-31.3
Unemployment rate ³ (% of work force)	5.8	5.6	5.9	6.8	-
New passenger car sales ³	135.7	118.1	139.3	88.0	-36.8
New truck sales ³	335.8	242.5	317.7	205.7	-35.3
Construction data ⁴					
Estimated value of new housing permits	407.3	307.7	368.1	275.1	-25.3
Number of new housing permits issued	160.0	117.7	138.5	106.3	-23.2
Average value per new housing permit	265.0	280.9	290.6	289.6	-0.3

¹ South Bend

² St. Joseph County

³ South Bend SMSA

⁴ St. Joseph County excluding the cities of South Bend and Mishawaka.

SOURCE: Bureau of Business and Economic Research, Indiana University at South Bend.

search, but another important indicator of major consumer purchases—housing activity—is found in Table 2. Note that the year-to-date index of new housing permits issued was 60 index points below the 1978 average.

As with South Bend then, all available indicators—sales of energy, employment, and housing—suggest that Elkhart is in a period of economic recession. The recession in the RV industry has had a strong impact on Elkhart and neighboring communities.

Outlook As a part of the November-December, 1978 *IBR* Outlook, I predicted "unspectacular performance in 1979" for the South Bend-Elkhart area economies. In the May-June, 1979 *IBR* Mid-Year Review, I suggested that these economies would be "adversely affected

whether or not the national economy avoids a near term recession." This is essentially what has happened, and I see no reason to revise the prognosis. Data more recent than our published indicators point to a continuing decline in housing construction (down some 25% in October), and a further decline in manufacturing employment (down 300 jobs in September) in South Bend with no gains in durable goods manufacturing for a third consecutive month. The employment picture is expected to deteriorate further in the next few months. Bright spots include a vigorous non-residential construction sector in South Bend, and a relatively stable nonmanufacturing labor force in Elkhart. The first two to three quarters of 1980 should be a period of continued decline and slow recovery.

TABLE 2
SELECTED INDICATORS FOR THE ELKHART AREA (Seasonally adjusted: 1967 = 100)

<i>Indicator</i>	<i>Average 1978</i>	<i>Average Jan.-Aug. 1979</i>	<i>August 1978</i>	<i>August 1979</i>	<i>Percent Change Aug. 1978-Aug. 1979</i>
Industrial electricity sales ¹	150.4	164.4	152.8	160.2	4.8
Natural gas sales ¹					
Commercial	161.2	174.5	139.8	137.9	- 1.4
Industrial	236.7	271.8	251.2	222.8	-11.3
Employment data ²					
Nonagricultural employment	177.2	175.6	177.3	167.9	- 5.3
Manufacturing employment	141.1	136.9	139.9	128.5	- 8.1
Nonmanufacturing employment	260.0	265.1	262.1	257.1	- 1.9
Unemployment rate ² (% of work force)	4.9	7.2	5.4	10.0	-
Construction data ³ *					
Estimated value of new housing permits	303.9	287.1	271.4	322.2	18.7
Number of new housing permits issued	198.3	138.0	192.3	136.0	-29.3
Average value per new housing permit	179.6	210.8	180.4	251.8	39.6

¹ City of Elkhart

² Elkhart SMSA

³ Elkhart County excluding the cities of Elkhart and Goshen.

* All construction data had base year 1970 = 100.

SOURCE: Bureau of Business and Economic Research, Indiana University at South Bend.

EVANSVILLE

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Despite an earlier prediction, the Evansville regional economy is not expected to experience a recession in 1979. However, the quarterly variation in economic activity will create a different pattern than that of the national economy. The national economy had strong first and third quarters with a weak second quarter and probably a weak fourth quarter. In Evansville, the first quarter was very strong, after accounting for seasonal factors. The sec-

ond and third quarters both declined in general economic activity, but there might be a slight upward growth in the fourth quarter.

Expressed in terms of the Evansville Area Business Index, the first quarter index was 149.30 (1967-69 = 100), but the second quarter index dipped by 0.9% to 148.00. In the third quarter the index is expected to decline to 144.97. Reductions in autos and durable goods, sales, fuel shortage, and a few incidences of labor dispute contributed to these declines. In the fourth quarter, the settlement of labor disputes, strong construction activities, stable financial activities and a stable employment level should hold the regional economy above the third quarter. If the national economy experiences weak demand, the fourth quarter regional index could show a decline, but that probability is not expected to be high.

Thus, 1979 should show slight growth over 1978. An increase of about 3% is estimated for the 1979 index. (See Table 1.) Over the whole year, industrial production, trade and services, construction, transportation and financial sectors all showed some growth rates over their 1978 levels. Employment in 1979 will hold about the same level of 1978. Except for the national decline in demand for home appliances, the demands for goods and services produced in the Evansville area will suffer little or not at all because of a well-diversified industrial structure.

The national economic picture for 1980 is blurred by many potential uncertainties. Energy costs will certainly rise since national programs have not increased the supplies of existing and alternative energy sources. Inflation will continue in 1980 and future years. The rate of inflation could ease somewhat in 1980 if food costs remain stable and if the interest rate declines sometime after mid-year.

Given the above assumptions about the

national economy, the 1980 Evansville economy will stay at about the same level of 1979 or will improve slightly. The Evansville Area Business Index is projected to have 1% growth rate with an allowance of 1% either way. That is, if the total demand is strong, the regional economy may grow by 2%; but if the total demand is weak the regional economy will stay stagnant with no growth. Some positive factors should help Evansville's economy, however. The construction projects of the Riverview Commerce Center and a large shopping center on Green River Road will undoubtedly boost the regional economy by increasing trade and services activities. The unemployment rate in the region was the second lowest among all SMSA's in Indiana for August 1979 (5.7% in comparison to the national 6.0% and Indiana's 7.3%).

No significant weaknesses are observed in all the industries and sectors of the regional economy. In other words, the Evansville area's supply capabilities seem to be sound; the only worries will be on the demand side.

EVANSVILLE AREA BUSINESS INDEX (1967-69 = 100)

	Industrial Production	Trade & Services	Construction	Transportation	Finance	Employment	Composite Index
Annual							
1977	148.38	125.63	125.86	104.55	268.52	103.87	136.60
1978	147.38	128.22	160.82	110.97	315.96	105.74	142.53
1979*	156.04	127.83	163.32	111.38	343.41	105.70	146.94
1980†	158.00	128.00	165.00	111.50	360.00	104.80	148.47
Monthly (1979)							
Jan.	153.04	131.01	195.28	112.26	345.55	103.89	149.17
Feb.	159.13	134.33	182.16	112.54	321.22	104.81	150.70
Mar.	154.97	127.43	181.52	112.76	347.69	105.48	148.09
Apr.	163.13	127.42	162.41	98.55	355.66	104.12	149.09
May	158.32	127.51	154.26	114.47	339.31	105.17	146.98
June	159.40	126.66	160.94	112.48	344.30	106.50	147.94
July	168.36	125.04	156.37	112.36	335.20	107.09	150.36
Aug.	141.25	127.37	153.54	115.58	354.94	106.48	140.90

*Estimated

†Projected

RICHMOND

ASHTON VERAMALLAY
Professor of Business & Economics
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Despite national economic conditions the Richmond area economy continues to show strong resiliency. A concerted intentional effort is underway to build inventories, and that has resulted in increased sales and orders in several industries, especially manufacturing, retail service, and broadcasting. In some enterprises tighter consumer credit will have its expected impact, but, given the mood of cautious optimism, this impact can be partly offset. The building trades and automotive retail outlets are expected to bear the brunt of such impact.

Most employers anticipate a moderate job climate during the coming months. The current unemployment rate of 5.9% may worsen if there are industrial layoffs, energy bottlenecks, and tighter consumer credit controls. Further, improvement in labor management relations and in air quality standards is vital to the continuing stability of Wayne County's economy which employs about 37,000 persons.

The need is critical for more trained personnel in engineering, electrical, industrial, mechanical, management, clerical, health, and craft related occupations. A positive response to such need by our educational institutions can brighten the employment picture.

Furthermore, utilities (gas, electricity, water, and telephone) have shown modest increases in consumption rates compared with last year. The natural gas consumption rate was in the forefront with a 29.7% increase followed by electricity (5.0%), telephone (2.3%), and water (0.5%).

At the end of August 1979, the city's financial institutions (commercial banks and savings and loan associations) held total depos-

its of \$405,078,082 reflecting an 8.2% increase over the last year. They expect the present trend to continue.

For Richmond, the economic outlook for 1980 is cautiously optimistic.

MUNCIE-ANDERSON

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Ball State University



December 1978 apparently marked the end of a prolonged "growth cycle" that started in March 1975. Whether 1979 will be called a year of recession or of stagflation primarily rests on how the economy fares during the fourth quarter. Real GNP was no higher at the end of the third quarter than the first, suggesting that the economy lost its forward momentum during the past winter. The negative 2.3% real growth in GNP during the second quarter dovetails well with my analysis published in the May-June *IBR*. On the other hand, the preliminary estimate of 2.4% real GNP the third quarter is not as surprising as the resurgence of final sales, which creates uncertainties as to how much buying power the consumer retains. In these times of rising inflationary expectations the consumer's behavior remains elusive. Nevertheless, recessionary forces continue to gain momentum. Among those forces are the continuing erosion of real disposable income in the face of relentless inflation, the dwindling supply of mortgage credit to finance housing in an environment of surging interest rates, taut corporate liquidity, the Fed's credit tightening moves, and the auto sales slump.

Hence, real GNP will probably show a decline during the fourth quarter. The rubric, "recession," is likely to be applied to the period beginning April 1979 and extending through the first, possibly the second, quarter of 1980.

ANDERSON

For many Anderson auto workers the recession is now a reality. As I indicated in the May-June *IBR*, total auto sales for 1979 will be substantially below the 1978 IU forecast of 10.9 million. Of Anderson's two GM divisions, Delco Remy will be hit hardest by declining sales. As of November 3, approximately 1,400 workers have been idled at Delco Remy and Guide divisions, but only 200 are from the latter.

Delco Remy has been Madison County's largest employer for almost all of its fifty-two years in Anderson. Employment at the sprawling 550-acre, sixteen-plant Delco complex totaled 16,200 in 1967 but had dropped to 15,200 in 1978. Although management claims that \$190 million has been invested in these Delco plants in 1977-78, workers argue that some of their machinery is old and is too obsolete to compete with new equipment installed in southern plants. Indeed, since 1975 Delco has concentrated most of its expansion of production facilities in the South—a new plant opened in Meridian, Mississippi in 1975; a Laurel, Mississippi plant commenced operations in 1977; and a generator plant is nearing completion in Albany, Georgia. Delco is also going overseas—officials recently announced that a plant will be built in France.

GM's Guide division provides a relatively sharp contrast to Delco Remy. Guide added over 500 employees to its payroll in 1977, and may add another 400-500 jobs between 1980-81 when a new plant comes on line. Guide employs roughly 6,000 workers in its Anderson complex and another 1,000 at its Monroe, Louisiana plant. While Delco's labor relations have been characterized by confrontation (currently a strike threat exists because of local contract issues), Guide management appears to have achieved a greater degree of cooperation from local union leadership.

The fact that 38% of Anderson's employed labor force is working for these two industrial heavyweights is a mixed blessing. The exodus of

manufacturing firms from Anderson in recent years—i.e., Howe, Sprague, Anaconda, and Nicholson File—must, to some degree, reflect their inability to compete with GM's wage and benefit package. Obviously that package, which averages over \$15 per hour, also inhibits Anderson's ability to attract new manufacturing firms.

Between September 1978 and September 1979 Anderson's employed labor force (seasonally adjusted) declined from 57,400 to 54,900 and unemployment rose from 6.4% to 9.4%. If auto sales remain in the doldrums for the balance of the quarter (and this analyst believes that they will), significant additional layoffs are likely before Christmas, and unemployment will probably remain relatively high through much of the coming year.

MUNCIE

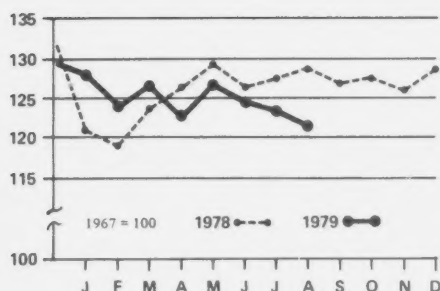
Data through August for the Muncie Business Index* show a downward trend in 1979. Manufacturing appears to have borne the brunt of the decline (see accompanying table and figure), but if allowance is made for the impact

TABLE 1 Muncie Business Index

Sector	August 1979	Change from Previous Month
Manufacturing	101.0	-3.1
Retail & Services	124.3	-1.5
Government	165.4	-1.2
Financial & Real Estate	114.3	-1.6
Composite	121.7	-2.0

of the Westinghouse strike, the decline appears to have affected all sectors of the index quite evenly. Overall the composite index dropped 2% from July and was roughly 6% below its January level. Retail and service sector gains

*Data for the Muncie Business Index are compiled by Ball State University's Bureau of Business Research under the aegis of Dr. Joseph Brown.



MUNCIE BUSINESS INDEX*
(seasonal and inflationary effects removed)

were negative after seasonal adjustment, and auto and truck sales were 23% less than in August 1978. Department store sales were off 11% from August 1978. New housing completions were off 23% and deed recordings down 11% compared to August 1978.

A new zinc-oxide battery might have a favorable impact on Muncie's economy. Much of the credit for the breakthrough in battery technology goes to Delco Remy's engineering center in Anderson. This technological breakthrough allows development of relatively light zinc-oxide batteries which can store, pound for pound, two to two and one-half times as much energy as conventional lead-acid batteries. The zinc-oxide batteries are designed to power small mass-produced electric cars slated to be available by the mid-1980s. Delco officials have not yet announced where the new batteries will be produced, but a small section of Muncie's new Delco Battery plant has been used for pilot production of zinc-oxide batteries since the plant was completed in June, 1978. This plant, located in Muncie's Industrial Park, has adequate space for expansion. The Muncie location is excellent because it is close to Delco's engineering center in Anderson, and reasonably close to Detroit. Clearly, both Muncie and Anderson would benefit from a decision to produce zinc-oxide batteries in Muncie.

Muncie's employed labor force as of September 1979 was 51,700, a decline of 1.3% during the past year and more than 3% below

the September 1977 level. In September 1979 Muncie's unemployment rate stood at 7.7%, significantly lower than Anderson's.

Muncie's economy is considerably more diversified than Anderson's. Durable goods production accounts for only 36% of its personal income as opposed to 60% for Anderson. Muncie's three largest manufacturing firms combined employ fewer workers than Anderson's Guide division, which in turn is dwarfed by Delco Remy. Muncie has many small business firms (i.e., a large number of machine tool shops) that manufacture producers' durable equipment and that contract with larger firms producing consumers' durable goods or components for durable goods (i.e., auto transmissions and auto batteries). For such firms a downturn in orders is followed in a few months by a decline in sales with similar changes in production lagging somewhat further behind. Thus, given the economic slowdown registered during the second quarter of 1979, production and employment are likely to be sustained for an additional quarter or two, due to lagged effect associated with durable goods production. That being the case, Muncie's unemployment totals may well move higher in late 1979 and the first quarter of 1980.

JEFFERSONVILLE NEW ALBANY (Louisville Area)

FAY E. GRECKEL

*Professor of Business & Economics
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Stagflation seems a particularly apt term for describing the local metropolitan economy as 1979 draws to a close. Prices and interest rates have, of course, been rising sharply, while other indicators of economic activity have exhibited slow growth or decline for the past several months.

TABLE 1

INDEX OF LOUISVILLE AREA BUSINESS ACTIVITY

	Sept. 1978	March 1979	June 1979	Sept. 1979	Quarterly Average, 1979			Change in Index QI to QIII
					I	II	III	
Industrial production	113.7	123.8	113.3	113.7	125.5	122.6	118.4	-7.1
Transportation	187.4	185.9	187.2	181.2	182.0	191.9	187.0	+5.0
Trade and services	143.5	154.9	148.0	153.1	151.4	149.8	148.8	-2.6
Construction	165.8	144.0	149.8	156.1	152.4	143.5	150.5	-1.9
Financial	342.0	343.8	357.7	374.8	346.6	365.3	375.6	+29.0
Employment	132.8	137.4	137.2	137.9	137.5	137.5	137.6	+0.1
Composite Index	156.8	162.8	161.0	162.3	162.9	163.6	163.1	+0.2

1967 = 100 (seasonally adjusted)

SOURCE: Research Department, Louisville Area Chamber of Commerce

The seasonally-adjusted indexes in Table 1 demonstrate the generally sluggish state of the economy during 1979. From the first quarter to the third quarter of 1978, the composite index rose by 19.9 points; during the same period this year, the composite index rose only 0.2 points. Of the six individual indexes, three rose between the first quarter and the third quarter, while the other three declined.

Industrial production sagged somewhat this year. The production index dropped steadily from the first to the third quarter, and average manufacturing employment fell by more than 2,000 workers during that period. Layoffs at the Ford LTD plant, General Electric, and other durable goods manufacturers contributed to these declines, but cutbacks were by no means confined to the durable goods sector. According to Kentucky Department for Human Resources estimates, the average weekly hours worked on production jobs were virtually the same in the first and third quarters of 1979 but were noticeably lower than a year ago. This September, for example, the average workweek was 39.7 hours, compared with 40.5 hours in September 1978.

Total employment in the five-county metropolitan Louisville area rose during the first few months of the year and then leveled off. Except for a brief gain in July, nonfarm employment remained almost stationary, at about 414,000 workers, from May to September. The area gained about 8,700 nonagricultural

jobs during the twelve months ending September 1979. Ordinarily, the Louisville area adds about twice that number of jobs in a year; between September 1977 and September 1978 the gain was an unusually high 26,000 jobs. In Clark and Floyd Counties, the Indiana portion of the SMSA, the number of nonfarm jobs rose by only 1,000 in the September 1978-September 1979 period. This was approximately half the typical employment increase of recent years.

The metropolitan area unemployment rate (not seasonally adjusted) fell steadily from 6.2% in January to a low of 4.2% in May, then settled in the 5.0% to 5.4% range, except for a jump to 7.1% in the month of August—the only time since 1976 that the area-wide unemployment rate has been that high. The estimated unemployment rate for residents of Floyd and Clark Counties, bottomed at 5.2% in April, remained close to 5.5% for the next few months, and then jumped to 7.2% in August, the latest month for which that statistic was available.

Retail sales appear to have been rather sluggish this year. The trade and services index rose a healthy ten index points from September 1978 to September 1979, but most of that growth came in late 1978. This year the index averaged slightly lower in the third quarter than in the first quarter. Local department stores have held a record number of special sales throughout the fall. Although these special sales

TABLE 2
EMPLOYMENT AND UNEMPLOYMENT IN THE LOUISVILLE-JEFFERSONVILLE-NEW
ALBANY AREA, SEPTEMBER 1978-SEPTEMBER 1979*

	<i>Sept.</i> <i>1978</i>	<i>March</i> <i>1979</i>	<i>June</i> <i>1979</i>	<i>Sept.</i> <i>1979</i>
Clark and Floyd Counties				
Total nonfarm employment	45,200	44,500	45,800	46,200
Manufacturing	12,200	12,300	11,900	11,700
Nonmanufacturing	33,000	32,200	33,900	34,500
Residents unemployed	3,600	4,100	4,000	5,100†
Unemployment rate	5.3%	5.9%	5.7%	7.2%†
Louisville Metropolitan Area‡				
Total nonfarm employment	405,100	402,800	413,600	413,800
Manufacturing	110,800	108,400	107,700	108,500
Nonmanufacturing	294,300	294,400	305,900	305,400
Residents unemployed	19,300	20,100	20,800	23,000
Unemployment rate	4.6%	5.0%	5.0%	5.4%

*The employment data refer to establishments located within the area cited and include workers on strike; the unemployment data refer to residents of the area cited and are not seasonally adjusted.

† August, 1979 (latest figures available).

‡ Includes Floyd and Clark counties in Indiana, and Jefferson, Oldham, and Bullitt counties in Kentucky.

SOURCES: Indiana Employment Security Division; Kentucky Department for Human Resources.

may indicate a need to bolster sagging consumer demand, they also probably reflect the high interest cost of holding large inventories and, given the widespread anticipation of recession, merchants' desires to sell as much as possible before discretionary incomes fall.

Compared with the other indicators, the thirty-three point rise in the financial index between September 1978 and September 1979 makes it appear that banking activity has been unusually vigorous. That gain, however, was far smaller than in other years, and only about one third of the increase that the financial index recorded during the preceding twelve months. Bank lending has been falling off, with mortgage loans and consumer loans falling sharply in October. Some financial institutions face liquidity problems as depositors reduce their non-earning or low-interest accounts to seek a better hedge against double-digit inflation. However, high interest rates—which reduce both the demand for long-term loans and the number of borrowers that banks consider capable of handling loans—are primarily to blame. Mort-

gage rates have risen from the 9½-10½% range in November 1978 to a range of 11½-14½% early this November. Several banks and savings and loan associations have stopped making mortgage loans, while many others require 20-25% down payments.

Not surprisingly, housing sales, which were strong through much of 1979, have recently fallen off, particularly in southern Indiana. Speculative home building has declined sharply, but construction as a whole has risen through much of the year, though it remains below the record levels of 1978.

All in all, the local economy, like the national economy, appears to be on a plateau which foreshadows either a business cycle downswing in 1980 or simply another year of little or no growth. National events will determine the outcome, but a downturn seems more likely at present. Historically, recessions hit the Louisville area one or two quarters after the national economy turned down; this year there does not seem to be a similar lag.

Whichever scenario occurs, unemployment will be higher in 1980. Total employment is likely to increase very slowly over the year, or it may even decline somewhat. Retail sales are likely to be rather weak, unless other aspects of the economy improve significantly. The virtual collapse of construction helped precipitate and intensify the 1974-1975 recession; construction should not fare too badly this time. Although single-family-home construction is unlikely to pick up until interest rates recede, building permits have been issued for extensive condominium development. Several major construction projects—Shippingport Square, the Performing Arts complex, the Galleria—are underway or about to start in downtown Louisville, and community projects, especially schools, will bolster the construction sector in Clark and Floyd Counties.

Thus, the overall outlook is for a decline in the area economy during 1980, but only a moderate decline.

**GARY—HAMMOND
EAST CHICAGO
(Calumet Area)**

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A year ago we predicted that there would be no recession in 1979 in Northern Indiana. We also predicted that the local steel cycle would still be rising in 1979 and would probably crest sometime in 1980. From all indications, this forecast may continue to be correct in spite of some minor soft spots induced by the unexpectedly sharp downswing in auto orders. Structural steel continues to more than hold its own and may keep the cycle on an upswing at least until the first or second quarter of 1980, when capital formation may slow down and ultimately recede. Compensating forces, none-

theless, keep the regional steel cycle from dipping deep as, first, autos rebound and, subsequently, construction and public contracts accelerate.

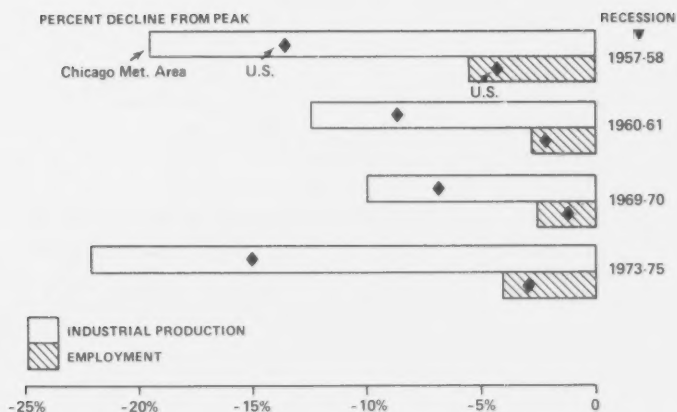
The automobile industry has had some product-mix and product-planning problems. Adverse consumer reactions, coupled with declining consumer liquidity, contributed to the downturn in auto sales. We expect autos to overcome their current product-mix and marketing difficulties by mid-1980. Moreover, as consumer liquidity begins to rise in 1980, after a brief adjustment period during which consumer purchases of durables decline, auto sales will recover, aided by expansionary monetary and fiscal policy.

Steel will lag autos somewhat because of an unexpected slowdown in capital formation and a slight decline in machine tools, probably in the middle of 1980. The local manufacturing index will be affected by rising food prices which traditionally crowd out consumer financial resources that would have been spent on those durables underlying the local economy.

In 1980 steel may also suffer from technological lags and a cost-price squeeze. Nationally about 86% of raw steel is poured from modern facilities, BOF and electric. Even with modern facilities in Porter County, Northern Indiana is beginning to lag some national steel-producing counties. Our region is sensitive to energy shocks, which are likely in 1980.

Residential construction is on a downtrend and will continue sagging for much of 1980. The current boomlet in commercial construction, with small retail establishments springing up throughout Lake and Porter counties, will subside early in 1980 and will subsequently recede. Industrial construction has shown very little life; however, this cycle may rebound in the second and third quarters of 1980.

National forecasters often use so-called leading indicators to predict the timing of future recessions. An alternative method would be to use the indexes from regions in the U.S. where business activity declines before the



national cycle turns down. Our local index would serve well as such an indicator. In all major postwar recessions the local index turned down ahead of the national peak; moreover, the local index never gave false signals as did national leading indicators in 1967 and in 1978. In the 1957-58 recession the local index led by six and one-half months; in 1960-61, over three months; in 1969-70, over six months; and in 1973-75, almost seven months. There was no clear local downturn in 1978; thus, we confidently predicted no recession for most of 1979. Currently we are experiencing what appears to be a downturn; thus, with some trepidation, we might predict a decline from the national peak for about the middle of 1980 or sooner, if extraneous shocks or uncertainty concerning future monetary policy persist.

As firms find it increasingly more difficult to maintain profits by raising productivity and cutting real wages by rapidly inflating prices, they will, in 1980, bring new direct pressures to bear on unions to reduce labor costs. Locally American Bridge is pointing the way; they may be followed by U.S. Steel and the Budd Company.

If a recession unfolds, the local economy will take longer to regain its forward momentum. In 1957-58 the local index lagged the

national upturn over five months; in 1960-61 the lag was almost four months; in 1969-70, the lag was over four months, and in 1973-75 the lag was over twelve months. We are still considerably below our 1973 peak: (the local Bell index was at 109 in April-May 1973; the index averaged 107 in the current quarter).

Our analysis of interdependent series suggests that the 1980-81 recession may follow the 1969-70 profile. The adjoining chart, prepared by the Illinois Bell Economic Research division, shows the relationship between recessionary reductions in local output and the concomitant effect on employment. Clearly the effect on local jobs will be much less than would be indicated by the slowdown in production.

In the 1973-75 recession, steel employment dropped 11.29% and fabricated metals dropped 28.13%, yet total employment actually increased by 1.86%. Thus, we would expect continued growth in nonmanufacturing employment in 1980 to more than offset an anticipated loss of about 9% in manufacturing.

A survey of local firms' expectations for 1980 was conducted by fifty-five business students at Indiana University Northwest. In general, 1980 is viewed favorably, but faster price increases are expected. A simplified tabulation of the results follows.

	Manufacturing	Construction	Autos	Transportation	Retail	Utilities	Finance and Insurance
Moderate or significant growth expected in 1980	65%	34%	72%	32%	66%	75%	94%
No growth or decline expected in 1980	35%	66%	28%	68%	34%	25%	6%
Moderate or significant growth experienced in 1979	44%	86%	67%	30%	78%	65%	94%
No growth or decline experienced in 1979	56%	14%	33%	70%	22%	35%	6%
Prices or rates expected to rise as much or more than in 1979	89%	52%	83%	67%	89%	74%	38%
Prices or rates expected to rise less than in 1979	11%	48%	17%	33%	11%	26%	62%
Prices in 1979 rose as much or more than general price level	62%	93%	55%	5%	62%	95%	83%
Prices in 1979 rose less than general price level	38%	7%	45%	95%	38%	5%	17%

FORT WAYNE

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Over a year ago, on November 2, 1978, the Federal Reserve announced a series of policy changes "...to strengthen the dollar and thereby counter continuing domestic inflationary pressures." This policy implied controlling the growth rate of the money supply (M_2) and was successful to the extent that growth fell from a 9.5% annual rate in March-November 1978 to a 4.7% rate in November 1978-March 1979. Accordingly, the economy lost momentum (as predicted in the 1979 Outlook), falling from an annual growth rate of 5.6% in 1978:4 to a negative 2.3% in 1979:2. By May, however,

the Federal Reserve had forgotten its promise (which was not assumed in last year's forecast). The money supply exploded, growing at a 12.9% annual rate from May-September 1979, and the economy responded (which was not forecast) by growing at a 2.4% annual rate in the third quarter.

Growth rates in the money supply were even higher than before the November 1978 policy shift. Inflation was rampant largely because of the sustained, excessive growth rate in the money supply over the last several years. Therefore, on October 6 the Federal Reserve announced yet another new policy to control directly the runaway growth rate in the money supply. Thus, as the economy enters 1980, the process of "drying-out" will start again. Because of its relatively high employment in durable goods manufacturing, the Fort Wayne area will bear a disproportionate share of this "drying-out."

Will the Federal Reserve reverse its "tight money" policy in time to reverse the "drying-out" of the national economy before the end of 1980? The current Federal Reserve policy is sure to yield, once again, to the political "necessities" imposed in a presidential election year. New stimulative policy is forecast to occur in time to cause the national economy to register positive growth in the third quarter. The peak-to-trough decline of this recession should approximate one-half that of the 1973-75 recession. Therefore, a forecast of the local economy may be gleaned from analyzing what happened to it in the last recession.

During the last recession, total payroll employment in the four-county Fort Wayne SMSA declined from a high of 160,800 in July 1974 to a low of 147,300 in May 1975—a decrease of 13,500 or 8.4%. Eighty-five percent of the decline was in the durable goods manufacturing sector. Given the normal one-quarter lag in local economic activity compared with the national economy, local employment should bottom out in the third quarter after decreasing by 5,000-7,000. Essentially all of the decrease is forecast to occur in the durable goods manufacturing sector. Nondurable and nonmanufacturing employment should remain essentially stable during the corresponding period.

In the last recession, Fort Wayne-area department and discount store sales declined 17.3% in real terms on a seasonally adjusted basis, and the timing coincided with the peak and trough in national economic activity. Accordingly, department and discount store sales are forecast to decline through the second quarter, showing a 4-6% year-to-year increase in nominal terms and a 2-4% decrease in real terms. Other retail stores should experience lesser or greater sales declines depending upon their percentages of durable goods sales, as compared with department stores.

During the last recession, the local housing cycle preceded the national economic cycle substantially. Specifically, seasonally adjusted single-family-housing starts declined from a peak average of 158 per month for 1973:1 to a trough of 70 per month in 1974:4, a decline of 56%. In the current cycle, single-family-housing starts have declined from a peak of 200 per month for 1978:2 to 96 per month for 1979:3, a decline of 48%. Thus, local private housing is already depressed and will remain so until early next summer when activity should begin to pick up.

On November 1 approximately 3,000 employees struck International Harvester, the largest employer in the local economy. As of November 15, the strike has not been settled. If the strike continues more than three weeks, its impact on the Fort Wayne economy will be substantial. For example, in October, 1969, 7,000 General Electric employees went on strike for 101 days. Then, as now, the national economy was entering a recession. A comparison of economic data during that strike period with year-earlier data suggests that on a real basis area department and discount store sales declined approximately 12%.

There is no reason for optimism for the Fort Wayne-area economy in 1980. The durable goods portion of the business cycle will not bottom out in time to provide any significant stimulus to the local economy prior to year-end. If the International Harvester strike were to continue for two to three months, then the local economy would recover more in line with the national economy—as IH rebuilt its inventory—rather than lagging as it normally does. However, the higher level of activity in the fourth quarter of 1980 would be more than offset by the current lower-than-forecast activity.

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Robert H. Menke

Division of Research
School of Business / Indiana University

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In This Issue ■ ■ ■

Gasoline price increases throughout the nation are likely to continue; therefore, alternative means of transportation are once again of general interest. Of the many interurban lines which once connected Indiana's cities and towns only the South Shore remains. George Smerk provides an update on the prospects for this commuter system which runs from South Bend into downtown Chicago.

The output of the state is difficult to measure. Louis West presents a new set of estimates of Indiana's Gross State Product. Because of data limitations, 1977 is the most recent year for which a full set of estimates is possible. We will continue our efforts to improve the information available.

VIEWPOINT offers thoughts on the forests of the state and advocates ways to maintain this industry in Indiana. Robert Menke's statement is adapted from remarks he made to Senator Richard Lugar at a symposium on Forestry, sponsored by Indiana Forestry and Woodland Owners Association, on August 8, 1979.

—MJM

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South Shore Renaissance

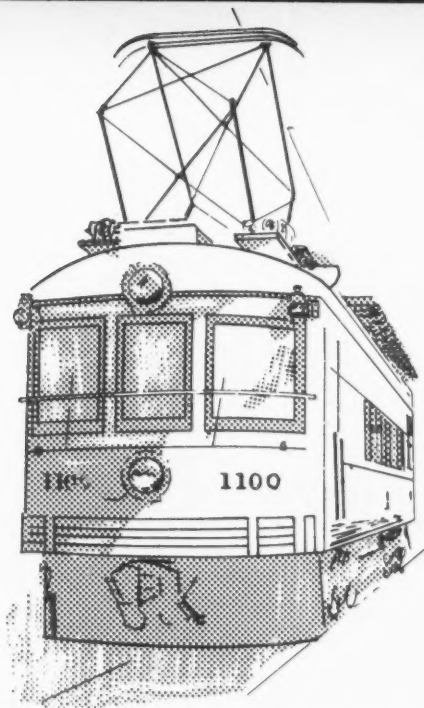
GEORGE SMERK

Professor of Transportation, Indiana University, Bloomington and Indianapolis. Director, Institute for Urban Transportation.

The Chicago, South Shore, and South Bend Railroad has always held a unique position on the American railroad scene. It is perhaps best known as the last electric interurban—it has survived forty years longer than almost all of the others. The South Shore has managed this by providing commuter rail service between South Bend and Chicago and by developing a substantial freight business. This longevity and capability is due largely to Samuel Insull's rebuilding and upgrading of the railroad in the 1920s. Insull saw the South Shore's right-of-way not only as a pathway for his electric utility's power distribution system, the original reason for his purchase of the property, but also as a means of providing quality transportation between northern Indiana and Chicago. Today's superbly maintained right-of-way is still a monument to Insull's foresight.

The South Shore is also famous for its modernized passenger cars. Some of the standard 1920s-vintage heavy steel interurban cars purchased during the Insull era were cut in half and lengthened during the 1940s. Air conditioning and fluorescent lighting were added to make the cars as modern as newly minted equipment of the same period. Today, in addition to the famed traction orange, panto-

George Smerk is the Governor's trustee to the Northern Indiana Commuter Transportation District. An article he wrote with Hagi Gil and David Shlay, "The South Shore Railroad: Preserving and Improving Commuter Service in Indiana," appeared in the July-August 1978 *IBR*.



graph-equipped passenger cars, the South Shore is symbolized by heavy unit trains of coal moving into power-generating plants and steel mills along its route.

Although the South Shore is a strange combination of nostalgic interurban operations—the trains still run down the middle of the street in Michigan City—and modern railway unit trains, it is typical of other railroads in that it is plagued with all the problems of commuter passenger service and with the burden of heavy and increasing passenger losses.

For more than a decade, the South Shore has been controlled by the Chessie System, which owns 94% of its outstanding shares of stock. The Chessie acquired the South Shore in 1966 to gain access to certain mills and generating plants that were natural markets for coal from mines elsewhere on the Chessie System. The South Shore freight service is quite profitable at present.

Passenger service is another story, however; Chessie views it as a millstone. Passenger losses through the '50s and '60s had been kept fairly well under control, and the railroad's freight business, even before Chessie's acquisition, was sufficient to carry the passenger losses and still

leave a tidy profit. As inflation rose during the late '60s and in the '70s, the passenger losses ballooned. In addition, the obvious need for new passenger equipment to replace the cars built in 1926 and 1928 made it clear that substantial inputs of capital were needed to keep the South Shore passenger service running. The rising failure rate of the old cars, particularly in bad winter weather, and the creeping ravages of rust and corrosion on car body components was evidence that the cars of the 1920s would not last forever.

The railroad cut back on service to save operating expense and to have more time for passenger car maintenance. The most dramatic cutback came in 1972 when extensive pruning left only two round trips a day between Chicago and South Bend as part of the railroad's thirty-nine daily trips. Most passenger trains run only between Michigan City and Chicago, with additional service between Gary and Chicago. Ridership fell from about 14,000 trips per day before 1972 to about 6,500-7,500 trips per day in recent years.

In the early 1970s, the South Shore tried to get a grant for new commuter cars from the Urban Mass Transportation Administration. This effort was abortive because no local body existed to act as the necessary conduit for federal funds, even though the railroad would have provided the required local share. At that time, Hoosier conservatism and distrust of federal programs were an overriding problem facing the South Shore. As the mid-1970s approached, it appeared to be only a matter of time before passenger service on the South Shore would be discontinued.

The story that follows had its beginnings in 1974 and recounts how the South Shore has entered into a period of renaissance that promises to transform it and its passenger service.

The Corridor Study

In 1974, the Indiana General Assembly appointed a Mass Transportation Study Commis-

sion to review the state's mass transportation situation. The Commission reported a need for improvement in mass transportation and recommended that the state take action and provide aid to mass transportation. Although Indiana had taken relatively little advantage of federal aid programs up to that time, there was rising pressure around the state to provide means so that local communities would have enough matching funds to acquire federal grants for transit.

In the latter part of 1974, the Federal Government made available to the State of Indiana planning money on a statewide basis; a large part of this was to be used in an inventory of public transportation in Indiana. This money was provided to the Governor who asked this author to conduct the inventory and make some policy recommendations. In early 1975, the Institute for Urban Transportation (IUT) conducted the statewide inventory of mass transportation operations, which included the South Shore Line. IUT recommended a state program of aid to mass transportation in the form of money and technical assistance.

Meanwhile, the Indiana General Assembly, heeding the report of the Mass Transportation Study Commission, created in 1975 a state matching grant program (state funds to help local areas provide the required match for federal transit grants), appropriating \$2.5 million in funds. The General Assembly also created the Public Transportation Advisory Committee to advise the Governor on mass transit matters and to apportion the state matching funds to be made available. Although by state law the matching grant program was to be handled by a division of public transportation within the State Planning Services Agency, such an agency was not funded at that time. The Governor's office chose to have IUT administer the state matching grant program as a part of the Indiana Mass Transportation Improvement Project (IMTIP); thus, an unusual situation resulted where a part of a state university was administering a state grant program.

In late fall 1975 the state matching monies were initially apportioned using a formula developed by IUT and approved by the Public Transportation Advisory Committee (PTAC). Of the matching funds from the state, approximately \$100,000 was for the South Shore. (The state money was made available on a formula based on the population of counties which had public transportation. The South Shore—which operates through Lake, Porter, LaPorte, and St. Joseph counties in Indiana—received aid on the basis of its service in Lake County. The Northwestern Indiana Regional Planning Commission (NIRPC), the planning agency for Lake and Porter counties, devised a formula for apportioning the money locally.) Perry Maull, Administrative Director of IUT, questioned the use of the money for the South Shore if the threats that had been heard for several years about the railroad going out of the passenger business were serious. If the passenger business was eliminated, the state money might be spent more wisely somewhere else. In December 1975, Mr. Maull visited the South Shore. He reported that this railroad's apparently vital role in the area should be carefully studied and documented. In April 1976, the Public Transportation Advisory Committee approved a recommendation to conduct a study of the South Shore corridor to see if, indeed, it was worthy of preservation and improvement. Mr. Maull began the process of acquiring the necessary planning money from the Urban Mass Transportation Administration (UMTA).

Getting the money together for the study occupied the summer and fall of 1976. In October, the South Shore petitioned the Interstate Commerce Commission for discontinuation of passenger service. It appeared that the corridor study was more important than ever if Indiana was to retain South Shore commuter rail service to Chicago. The IUT team, led by Hagi Gil and David Shlay, had already started data collection when the ICC held its hearings early in 1977. The hearings were lengthy and conducted at many places along the South

Shore Line. On the basis of the evidence presented, the decision of the ICC administrative law judge was that the railroad must continue to operate until February 8, 1978, in order to give the state and local governments a chance to take public action to preserve the service.

The Northern Indiana Commuter Transportation District

The strong interest of IUT in its corridor study was modest compared to that of the Northwestern Indiana Regional Planning Commission (NIRPC). Because the South Shore ran through NIRPC territory and affected the lives of the people in the area, NIRPC was extremely sensitive and very knowledgeable about the importance of the railroad and the continuation of its passenger service. James Ranfranz, Deputy Director of NIRPC, established a steering committee to help channel public input and support for saving and improving South Shore passenger service. Other support groups, such as Save Our South Shore, which had sprung up when the railroad made its petition, continued to be active. NIRPC, through the work of Mr. Ranfranz, brought together many interested groups to conduct a vigorous campaign for some help from the state. NIRPC, as well as IUT, had reviewed the hearings, and it was clear there was tremendous public support for the continuation of South Shore service. Moreover, NIRPC saw the great importance of a reinvigorated South Shore in helping to develop the full potential of the northwest Indiana region.

Thanks to those efforts, the 1977 General Assembly provided major help in preserving and improving the South Shore. It passed legislation that permitted the formation of commuter transportation districts as public bodies empowered to help commuter railroads. As a result of this, the Northern Indiana Commuter Transportation District was formed, effective June 27, 1977. The General Assembly also put its money where its mouth was by making a special

appropriation of \$3.6 million as a match to federal funds for South Shore capital improvements. In addition, the General Assembly continued the regular state matching fund program for mass transportation, some of which could also be used for the South Shore in matching federal grants. (The matching funds were available to match federal capital and operating money. The federal share is 80% for a capital grant and 50% for an operating grant. The Indiana state matching grant program provides up to 50% of the local share; the actual amount to each transit property depends on the formula allocation adopted by the PTAC and the sum appropriated by the General Assembly for the program.)

The next step was a major intergovernmental relations effort. The first move was to form the Northern Indiana Commuter Transportation District (NICTD). By law, each of the counties was to have its commissioners name a trustee and the Governor was to name a trustee to represent the state. From the first meeting in late June 1977, it was clear that the two main issues for the NICTD were capital improvements—primarily the purchase of new cars—for the South Shore and the provision of operating support.

At meetings and through correspondence, the trustees and the railroad discussed its plight. The trustees held an inspection tour of the railroad in September 1977. It was obvious that the railroad right-of-way was still in superb condition, particularly between Michigan City and Chicago. It was also clear that the cars were in dire need of replacement. Shop facilities needed revamping and the power supply needed improvement. The condition of the stations and the parking lots along the railroad left much to be desired.

A preliminary report on the IUT corridor study was presented to the NICTD Trustees by Hagi Gil and Dave Shlay in August of 1977. The study was based on very conservative estimates of costs, revenues, and patronage. A number of alternatives were investigated, rang-

ing from keeping the railroad operating between South Bend and Chicago to complete abandonment and replacement of the service by automobiles or buses. The analysis showed that the railroad should be retained. Its main advantage was lower total cost to the NICTD region and the communities within it. Not to be overlooked were the environmental aspects—the last thing the steel mill area of Lake County needs is more gasoline fumes—and the potential of the railroad to move people to the national Lake Shore Park at the Indiana Dunes area of Lake Michigan. The IUT corridor study showed the South Shore to be the most economical and energy efficient of the options, and the safest and least polluting of the alternatives, as well as the option producing the least congestion. The study left no doubt that the South Shore should be retained and improved.

Some severe problems faced the NICTD in the fall of 1977. The February 8, 1978, deadline set by the Interstate Commerce Commission was not far away. Putting together the means of raising the necessary money for making capital improvements was to be a formidable challenge. In addition, there was going to be a need for operating aid. Operating aid, continuing year after year, would be the major problem for the NICTD, particularly since the Indiana counties viewed such matters suspiciously. The public supported the continuation of the South Shore passenger service, but there was a strong feeling that the Chessie should continue to pay for the support of passenger service out of freight profits.

Keeping the South Shore running physically apparently was going to be a problem, too. The South Shore operates through the snow belt of Indiana and bad weather plagues the railroad regularly. The winters of 1977-78 and 1978-79 were particularly difficult ones. Much equipment was disabled by bad weather; a major problem was fine, dry snow getting into the traction motors and shorting them out. The operating deficits were going up substantially and there was continued pressure from Chessie

headquarters in Cleveland to get rid of the passenger-service deficit. At the same time, the railroad realized that efforts were being made by public agencies and the State of Indiana and that, despite the complexities of the problem and the time involved, a solution was likely. The railroad withdrew its petition for discontinuation from the ICC, but announced that it might reenter the petition at some future time.

By the end of 1977, it was clear to all involved that the South Shore was necessary and that it was important to the development of the corridor area of the State of Indiana. It was obvious to the trustees that, while UMTA would be very helpful in providing federal funds, there was a need to involve as little local funding as possible from the four Indiana counties. The trustees also realized the need to study such site-specific matters as the location of stations and parking lot improvements, in addition to the major improvements.

NICTD decided to apply for federal mass transportation money to help buy new cars, and to improve the power supply and the maintenance facilities to support the new rolling stock. Site-specific improvements in station and parking facilities would be carried out under the NICTD aegis, but the strictly local portion of the matching funds would come from either directly affected municipalities or the county involved, not from the District area as a whole.

The trustees also thought it wise not to promise too much to the public. They made it clear that their objective was to keep the service running and to replace the older cars with new ones. They also made it clear that they hoped to improve the quality of the service in the short run before the new cars arrived. But no pie in the sky was discussed.

The NICTD staff worked vigorously in 1978. NICTD carried out negotiations with the railroad and signed a contract for service to cover some of South Shore's operating losses for 1976 through 1978. The staff wrote grant proposals to the Urban Mass Transportation

Administration, which eventually granted initial approval of the engineering portion of the proposals. UMTA approved \$700,000 in engineering money in the fall of 1978, and NICTD hired technical consultants: Larramore Douglas & Popham was the principal consultant; Louis T. Klauder & Associates was the special consultant on car design and specifications.

NICTD also secured a grant from the Economic Development Administration (EDA) to do some additional planning in the corridor, particularly to better understand the proper location for stations, the needs for parking lots, and so on. Population patterns and travel needs had changed since the railroad had been originally laid out, so the location of stations and support facilities had to be geared to meet the needs of the latter part of the twentieth century.

In discussions with the consultants, the trustees have made it clear that they are thinking of a very basic type of commuter car, probably similar to the stainless steel silverliners built by the Budd company and now operating in the Philadelphia area. Robust and simple control systems are desirable. Stainless steel cuts down maintenance costs (although the trustees feel that some part of the cars should be traction orange in color!). Between thirty and forty new cars, probably a mixture of motor and trailer cars, are likely to be ordered.

The engineering work also includes the railroad's electrical distribution system. The present electrification suffers from severe voltage drops. These drops do not bother the old cars, which can run on current as low as 800 volts DC, instead of the 1,500 volts DC for which they and the railroad were designed; newer equipment requires more constant voltage. In addition to the construction of additional substations to feed the overhead, there is also a need for expansion of the Michigan City maintenance facility to hold the new eighty-five foot cars. Track at the shops will be rearranged for storage of larger cars and for more efficient servicing and maintenance.

As a part of the EDA grant, George Beetle & Associates was hired to study the South Shore, paying particular attention to operating costs as well as to station location. The consultant's preliminary report in the spring of 1979 painted a bleak future for the railroad if the situation remained unchanged. An overall operating deficit for both freight and passenger service was possible by the late 1980s, so there would be no freight profits to help cover the passenger losses. Moreover, the passenger losses would grow substantially because of inflation and even modest attempts to improve the quality of the service. Worse yet, ridership had fallen substantially because of the unreliable service during the winter months of 1977-78 and 1978-79. (Ridership bounced back in the summer of 1979 so that patronage was above 1978 levels for the first nine months of the year, despite the service interruptions in the winter months.) Estimates made on the basis of projections of costs, revenues, patronage, and productivity showed that if these trends remained unchanged, continuing the South Shore operations would be very expensive indeed. Operating subsidies would grow significantly and the resources of the NICTD would be badly strained.

One possibility, of course, was for the NICTD to attempt to get sufficient federal money together to buy the South Shore from the Chessie System; public ownership of failing mass transportation systems is very common in the United States. The problem with that option was the NICTD would end up owning a passenger and freight railroad and there was concern over UMTA's reaction to such a purchase. Buying just the passenger portion of the railroad from Chessie would probably be a complicated and time-consuming business. New ownership alone would be no particular incentive for anybody to do a better job than had been done in the past, and there would still be simple reliance on subsidy to pick up the difference between revenues and costs.

George Beetle suggested a solution: an employee stock-ownership plan (ESOP) and a consumer stock-ownership plan (CSOP). Under an ESOP, the tax laws of the United States and congressional policy are brought into action to help spread the ownership of American corporations. To develop an ESOP corporation, a trust is created to acquire the shares of a company from the owner. The trust borrows money from financial institutions to pay the owner—the Chessie in the case of the South Shore—for the shares. Revenues from the company go to pay off the loan. The ESOP provides capital credit for the employees, all of whom become shareholders in the ESOP company without putting up any money whatsoever. Because the employees have a stake in the company, and will share in dividends from its operation, they have strong incentives to improve productivity.

A CSOP—consumer stock ownership program—should raise the interest of users and potential users in the passenger service. Through this device, another trust would be created and ownership of stock in the company would be vested in regular commuters on the railroad. They would then have every interest in using the railroad themselves and in getting others to use the service, thus improving the marketing potential. The ESOP would own 40% of the South Shore shares and the CSOP would own 40%. The remaining 20% of the shares could stay in the hands of the Chessie and other investors and they could continue to enjoy the benefits of improved earnings.

The use of the ESOP and CSOP has many advantages. Employees have a stake in the operations of the company, and their productive actions will be rewarded. The consumers in the area know that their own use of the service will help remove the railroad from a deficit position and yield them dividends. The Chessie will get its money right up front without the need for the years of litigation that is common in public takeover arrangements. The Chessie,

through its retention of the remaining 14% of the shares, might also enjoy substantial profits over the years because of the improved productivity and market attractiveness of the ESOP-CSOP South Shore.

For their part, the NICTD and the public enjoy the advantages of a more productive service without the need for substantial public monies. Moreover, as a private corporation, the new South Shore will continue to pay property taxes and income taxes. Thus, by the turn of the century, the state and federal governments may realize more back in taxes than was paid in the capital and operating subsidies to help revivify the railroad.

The ESOP/CSOP scheme has been discussed with the management of the South Shore and with representatives of the unions involved, and both parties have shown some interest. No final action has been taken.

Problems and Possibilities

The problems of the South Shore are not over. Potentially, one of the biggest and most unexpected of these problems is Randolph Street Station. The trustees hope to buy eighty-five foot cars to replace the present South Shore cars. Unfortunately, the engineering consultants have discovered eighty-five foot cars won't fit into the South Shore portion of Randolph Street Station in Chicago. Additional engineering money is needed to plan and design the renovated facilities; additional capital is likely to be required.

Over the next ten to twenty years, improvements on the South Shore are likely to total about \$50 million in public money. This sum will include all local, site-specific improvements in addition to the purchase of new cars and improvements to the power distribution system and renovation of the maintenance facility.

The problem of covering operating costs has been somewhat ameliorated, thanks to the 1979 Indiana General Assembly. The NICTD

staff found that for years the state had been taxing leased rail cars and that the revenues had ended up in the general fund of the Indiana treasury. Aided by substantial political support for the measure from the corridor counties, the General Assembly made that flow of tax money available to commuter transportation districts, at the discretion of the Governor. This will amount to \$1.2-1.4 million a year for the NICTD, the only commuter district in Indiana. These tax monies, in combination with the regular state matching fund program, should cover a large portion of the operating losses of the South Shore, perhaps without the need to use local tax money.

The trustees see substantial possibilities for the South Shore. They see a quality passenger service that would, in time, be largely self-sustaining and growing in use and usefulness. The most visible thing, of course, will be the new cars and the new stations along the line.

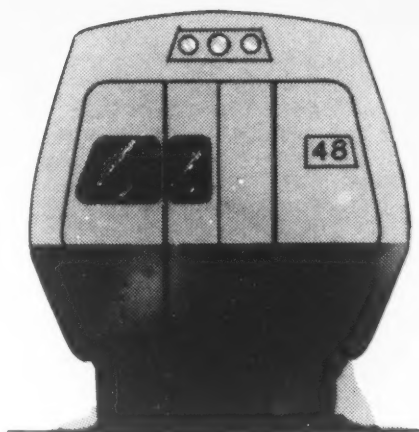
The service offered in the future will probably include a base service hourly between South Bend and Chicago and half-hourly between Gary and Chicago. In South Bend, Michigan City, Gary, East Chicago, and Hammond, feeder bus service would link the South Shore station with the rest of the community. In the not-too-distant future, countywide bus services in Lake, Porter, LaPorte, and St. Joseph counties may also provide feeder links with the South Shore.

The Michiana Regional Airport appears likely to be the South Shore's termination point in South Bend. Michiana will become a multimodal terminal for local and intercity buses as well as for airlines. The difficulty of reaching O'Hare Field in Chicago from northern Indiana could be mitigated for many residents by simply taking the South Shore to South Bend where several airlines provide service to many points.

The operation of special South Shore service to the national Lake Shore Park at the Indiana Dunes is another exciting possibility. The National Park Service hopes to keep

parking at the national Lake Shore Park to an absolute minimum; therefore, visitors would be encouraged to ride all the way by train or to drive to South Shore stations east and west of the park and then ride the train into the park. A number of the old Insull-era cars might be retained and operated during the summer in this special service.

The South Shore is not out of the woods yet, by any means, but clearly a cooperative effort among different levels of government and determined work by a lot of people can assure continuation of the South Shore service. The electric railroad *does* have a place in the present and in the future.



Indiana's Gross State Product

LOUIS J. WEST

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Gross national product (GNP) serves as a measure of the nation's economic health by indicating the level of economic activity taking place. GNP represents the value of all goods and services produced in the United States within a year. Gross state product (GSP), equivalent in concept to GNP, is a measure of the economic activity of a state. To state and local planners, both in business and government, GSP is superior to GNP because of its capacity to express the particular characteristics of a regional economy that set that regional economy apart from the economy of the nation as a whole. Such information can be used to help forecast revenues, budget expenditures, and assess future demands in order to project needed construction programs for production

and storage facilities. An absence of value-added data at the state level, however, requires that certain relationships between state and national output and payroll data be assumed. This, unfortunately, dilutes GSP's abilities to reflect the nuances of a local economy.

The basic formula used to generate a figure for gross state product is the value-added estimation technique of J. W. Hendricks and C. L. Jaycox. For each of the ten sectors listed on the accompanying table the sum of national income (NI), capital consumption allowances (CCA), and indirect business taxes (IBT) is weighted with the ratio of state to national income received (IR). Totals for all sectors are then summed to obtain total GSP. However, since NI plus CCA plus IBT equals gross

INDIANA GROSS STATE PRODUCT BY INDUSTRIAL SECTORS, 1977*

Farm	Mining	Contract Construction	Durable Manufacturing	Non Durable Manufacturing	Trade	Finance, Insurance, Real Estate	Transportation, Communication, Utilities	Services	Government	Other	Total
Millions of current dollars											
1,747.90	544.10	2,038.00	13,647.70	4,020.10	7,276.90	5,154.70	3,724.90	4,178.00	4,052.30	69.40	46,454.40
Percent of U.S. GNP											
3.55	1.13	2.44	4.98	2.21	2.25	1.92	2.21	1.78	1.71	1.18	2.45
Percent change (1976-77)											
9.58	12.15	18.04	16.73	11.01	9.54	12.58	11.40	13.70	9.97	15.19	12.09
Millions of constant (1972) dollars											
1,220.30	224.20	1,381.70	9,585.50	2,944.60	5,135.50	3,961.70	2,763.80	2,837.10	2,826.20	46.30	32,927.40
Rate of real growth (percent)											
9.51	2.11	10.84	8.80	8.19	4.75	6.03	5.25	5.47	2.27	1.37	5.84

* This table presents 1977 results. A six-page printout of the full twenty-year period (1959-1977) is available without charge from the Division of Research.

national product (GNP), the following equation is used:

$$GSP_{t,i} = GNP_{t,i} \times IR(\text{state})_{t,i} / IR(\text{U.S.})_{t,i}$$

where "t" is the year and "i" is the industry sector. This procedure assumes that production functions in the state and nation are similar for corresponding sectors. A weighting technique to reduce this problem for manufacturing is available but there are currently no methods available to reduce the potential errors in the remaining eight industrial sectors.

The equation used to determine gross state farm product (farm output data are available at the state level) is identical to that implemented by Hendricks-Jaycox and Henry Fishkind* with one minor variation: "value of home consumption" and "gross rental value of farm dwellings" were combined into "nonmoney income" using the definition in the farm

income concepts section in "State Farm Income Estimates."

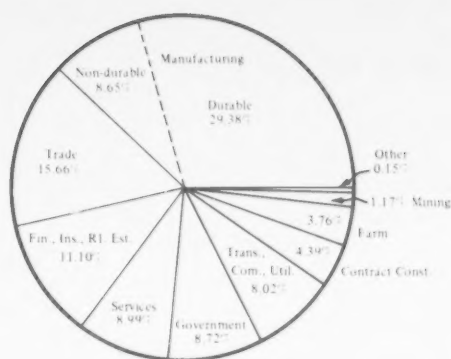
Farm output = cash receipts from marketings
+ Nonmoney income
- Net rent to nonoperator landlords
+ Net change in inventories
- (Feed + Livestock + Fertilizer + Seed) expenses
- Repairs and operation of equipment
- Miscellaneous operating expenses

Gross state government product was defined using the Commerce Department's concept and the Fishkind formula:

$$\text{Government output} = GNP_{ln} \times WSD_{ls} / WSD_{ln} + GNP_{fn} \times WSD_{fs} / WSD_{fn}$$

where WSD = wage and salary disbursements, l = state and local government, n = national, s = state, and f = federal government, both civilian and military.

*Fishkind, Henry H., "Indiana's Gross Domestic State Product, 1954-72," *Indiana Business Review* vol. 49, July-August 1974, pages 1-5.



Indiana Gross State Product 1977
Percent distribution by industrial sectors

Use of these formulas for the period 1958-1977 created Indiana GSP figures that agreed within 2-3% of the data generated by Henry Fishkind for the period 1958-1973. The accompanying table presents results for 1977 only.

Deflation to 1972 dollars was accomplished by recomputing GSP with real GNP by sector instead of with nominal GNP by sector.

The calculations described above are based on annual data that are not available until nine months after the close of the year. More current quarterly estimates would be extremely useful, and methods of estimating quarterly GSP are being pursued.

VIEWPOINT

Quality Timber for Indiana's Future

ROBERT H. MENKE

President, Styline Corporation, Huntingburg, Indiana

Indiana's extensive hardwood forests provided capital and raw material for early Hoosier entrepreneurs who created our first wood products industries. In the heyday of wood manufacturing, before the advent of steel and automobiles, before the depletion of virgin timber from our forests and before the depression of 1929, Indiana's furniture industry shipped more tonnage of solid oak furniture than any state in the Union. The renewed growth of wood furniture and kitchen cabinet manufacturing in Indiana, dating from the late '50s, is based largely on new woodworking and finishing technologies and on particleboard, hardboard, plastics, softwoods and low-grade hardwoods imported from other states.

In 1972 our Indiana wood products industry was valued at two billion dollars. Today, with extrapolated growth rates, plus inflation, it is safe to assume that we have a three-billion dollar industry employing more than 45,000 people. It is a scattered industry with many small plants which go largely unnoticed, except in areas like Dubois County where most jobs

are related to woodworking. Indiana is the third largest furniture manufacturing state in the United States and growth of capital investment in the last few decades is running close to 500% measured in actual dollars. Economists predict that in the near future consumers will be spending a larger share of disposable income on home furnishings and less on family automobiles.

A survey of wood users made by the Indiana Forestry and Woodland Owners Association this year shows that most Indiana furniture factories do not depend on lumber which comes from Indiana's 3.8 million acres of commercial forests. The 1977 Wood Users Directory, published by the Indiana Department of Commerce, is misleading in that it reports percentages of material acquired in Indiana through wholesalers and agents. Only their figures on fence manufacturing (30% of material acquired in Indiana), handles (50%) and pallets (85%) represent true figures on what actually comes from Indiana forests. Nevertheless, Indiana timber resources are important to

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our wood products industry and we must do all we can to encourage the growth of quality timber. Indiana has fourteen veneer mills and 200 full-time saw mills. Ten thousand oak logs were exported to western Europe from Indiana in the spring of 1979. Sawtimber volume, as surveyed in 1967, amounted to over ten billion board feet. As freight rates increase and as world timber shortages become more acute, our Indiana forest resource will naturally become more and more important.

There are two principal problems associated with tree farming in Indiana. First is the clearing of wooded land for pasture, row crops, power lines, etc. and the development of wooded land for home sites in areas where it should not be developed. The second problem is that of arousing interest in good forestry practices on the part of owners of small woodlots. Eighty-nine percent of Indiana woodlands are privately owned. The average farmer thinks he is too busy to take care of a small acreage of trees because the economic return over a long period of time—perhaps sixty to eighty years—does not justify the investment in timber stand improvement. It is true that an average income of \$30.00 per acre per year from hilly, well-stocked tree land permits an investment of no more than \$300.00 per acre. It also must be classified to exempt it from property taxes. But real estate agents have boosted the price of scrub land, which grows little more than briars, sumac and poverty grass, to over \$500.00 per acre. Tree farming in Indiana is a good long-term investment if one discounts the value of land.

A new day is coming for forestry in Indiana and the signs of its arrival are evident in what we see around us and in the news we read every day on energy and environmental problems. We can accelerate multipurpose forestry planning through educational programs which let people know the ecological values of wooded land for flood control, wildlife, and the maintenance of natural balances in nature. For instance, by maintaining a variety of bird populations, we can reduce the use of chemicals for control of insect populations. We can let people know about the diversity and strength of our wood products industry and its dependence upon a renewable resource. We can suggest to woodland owners that white pine planted on narrow dry ridges and tulip poplar on steep moist hillsides will provide a fair return in forty or

fifty years if timber prices continue to go up. We can tell our legislators that tax laws should be changed to discourage people from moving out of towns into costly rural settings. We can tell our congressmen that reserving 10,000 acres of Hoosier National Forest south of Monroe Reservoir as wilderness, banning timber harvests and rationing the use of the land with all the expense that entails, does not serve the best interests of the people of Indiana. We can suggest a positive "back country" wilderness alternative which would: (1) close abandoned county roads, (2) prohibit horseback riding and unauthorized motor traffic, (3) make openings to encourage wildlife propagation, (4) harvest timber away from trails and (5) police areas to control littering and off-road vehicles.

The Indiana Forestry and Woodland Owners Association is working with local forestry groups to encourage better timber management. We are trying to dovetail our programs with those of the Indiana Department of Natural Resources Forestry Division, The Hoosier National Forest and the Department of Forestry at Purdue University. We have enlisted wood products industry support for our organization and we are cooperating with the Indiana Lumbermen's Association. We have also extended privileges of reciprocal membership to Nature Conservancy and the Indiana Conservation Council. We are studying what role we might play in community forestry in order to get the right trees growing in the right places in small towns throughout Indiana. Shade trees and small woodlot parks bordering small communities could provide energy savings as well as recreational amenities.

We need to plant more trees and grow better trees if we wish to make Indiana a better place in which to live. The Governor of Indiana should convene a conference to address the matter of tax incentives to encourage better tree farming and to provide markets for low-grade timber. Faster tax write-offs should be authorized by Congress for investments in particleboard plants or any equipment used in processing wood residues. Only a small part of Indiana's 3.8-million acres of woodlots and forestland—perhaps one quarter million acres—is producing quality timber at or near its potential. Our woodlands can provide the capital and renewable material for the future expansion of our wood industry, as they did in the beginning of our history, if we all work together to accomplish these reasonable goals.



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Indiana Business Review

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**A Statistical Approach to Real Estate Appraisal:
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Division of Research
School of Business / Indiana University

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In This Issue ■ ■ ■

Indiana's economy has been experiencing the stress of slow domestic automobile sales. Suggestions of a coming recession make the unemployment rate a topic of growing interest. Gerald Lynch and Thomas Hyclak offer an analysis of Indiana's experience during previous recessionary periods to explain the swings in unemployment within this state. If their findings, based on technical work detailed in an Appendix, are correct, the unemployment problems of the state in expansionary periods are very different from those in recessionary times.

The sensitivity of the state's economy to swings in national economic performance is also seen in the latest estimates of Gross State Product (GSP) produced by Louis West. These figures for 1978 add to the body of data recently provided in this *Review*.

What gives value to a home? As expected, in today's world we are seeking answers from computer-assisted models. Alan Reichert and Chien-Ching Cho offer an introduction to computer-based analysis of housing values with their work for a section of Fort Wayne. Other efforts at computerized appraisal are in progress throughout the nation. This tool will assist professionals in real estate without displacing the elements of judgment and experience.

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A Comparison: Indiana and U.S. Unemployment Rates During Recessions

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Since 1950, Indiana's average unemployment rate has been lower than that for the United States (4.81% vs. 5.14%). Yet, whenever the country is in the depths of a recession Indiana's unemployment rate creeps above the national rate. This happened in 1954, 1958, 1970, and 1975. With government economists predicting a mild recession for 1980, the questions arise, Why does Indiana's unemployment rate rise above the nation's? and How severe must the recession be before Indiana's unemployment rate is higher than the nation's?

First, the question of why Indiana's unemployment rate rises above that of the U.S. This paper uses a simple variant of Okun's Law¹ to explore the relationship between unemployment and Gross National Product and finds that the reason for the discrepancy is that Indiana's unemployment is a different type than that of the nation as a whole.

Economists generally separate the causes of unemployment into three components. *Cyclical unemployment* increases during business recessions and declines as the economy recovers. If the economy is producing at its full potential there should be no cyclical unemployment and

the economy is considered to be at full employment. *Structural unemployment* is caused by factors such as geographic shifts in employment that lead to mismatches between the requirements of existing vacancies and the skills of those unemployed. *Frictional unemployment* is often termed voluntary in that some people find themselves temporarily unemployed as a result of decisions to leave one job in order to find another.

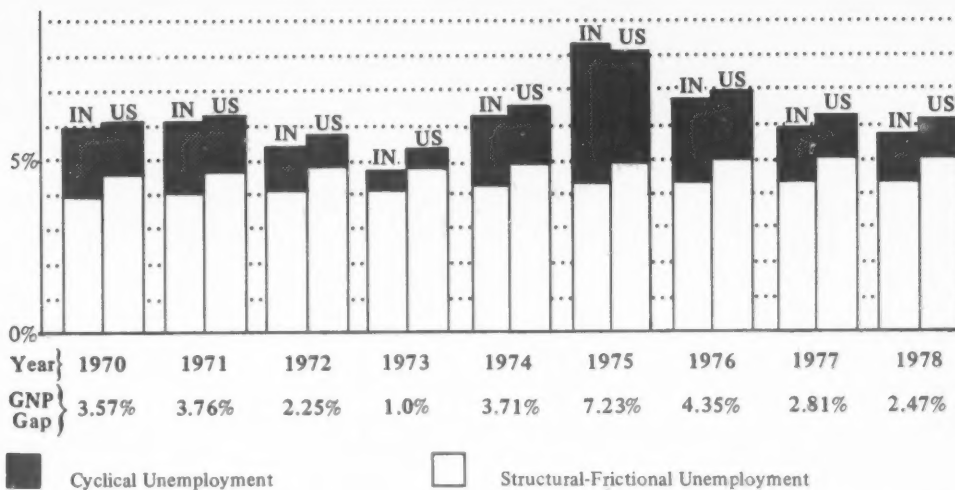
In practice, it is difficult to separate structural from frictional causes of joblessness; therefore, we separate unemployment into only two components: cyclical and structural-frictional. When unemployment is reduced to only structural-frictional unemployment the economy is fully employed because further increases in aggregate demand can do little to reduce structural-frictional unemployment.

The familiar macroeconomic relationship known as Okun's Law relates unemployment to the GNP gap² and allows a breakdown of unemployment into its two components. By examining Okun's Law through the statistical technique of ordinary least squares regression analysis, Indiana's unemployment rates for the

¹ For a full presentation of the model, see Appendix 1.

² For a definition of the GNP gap, see Appendix 1.

Proportions of Structural-Frictional and Cyclical Unemployment in Indiana and the U.S.: 1970-1978.



years 1950-78 were compared to the national unemployment rates.³ The findings give some evidence as to why Indiana has lower average unemployment rates than the nation but suffers more during recessions.

Indiana appears to have a structural-frictional unemployment rate, that is, a full-employment unemployment rate, about .85 of that of the United States as a whole. Thus, if full employment for the nation is 6.0%, it is about 5.1% for Indiana. However, Indiana's unemployment rate is more cyclically sensitive than that of the nation and whenever the gap between actual and real GNP widens due to a recession, statewide unemployment increases more rapidly than national unemployment. Relying on the GNP gap as a measure of the severity of a recession, Indiana's unemployment rate has exceeded that national rate only in the depths of a recession, the years previously mentioned. The bar graph shows the proportion of unemployment that has been structural-frictional and that which has been cyclical in the

years 1970-78. The structural-frictional rate for Indiana is always lower than that same rate for the United States. However, the cyclical component varies with the size of GNP gap listed on the graph. Whenever the GNP gap increases by 1%, the unemployment rate in Indiana increases by .56 while the unemployment rate for the United States increases by only .47. When the gap is great enough, the larger amount of cyclical unemployment for Indiana eventually overshadows the lower structural-frictional unemployment and the total state unemployment rate surpasses the national rate.

How severe must the recession be before Indiana's unemployment rate is higher than the nation's? If we assume that the full-employment unemployment rate is 5.14%, the 1978 rate, the GNP gap would have to be 5.85% before Indiana's unemployment rate would exceed the national rate. The GNP gap was 7.23% in 1975, 3.57% in 1970, and 5.97% in 1958. Thus, for Indiana's unemployment rate to exceed the national rate a downturn roughly as severe as the 1958 recession would have to occur. This would result in an unemployment rate of 7.66% for Indiana.

³ For a full listing of all of the sources of data used, see Appendix 2.

The high cyclical responsiveness of Indiana unemployment rates when compared to U.S. rates can be partially explained by the state's relatively high proportion of manufacturing employment and employment in the cyclically sensitive automobile and auto-related industries. Durable manufacturing activity has been linked to regional business cycles by Browne and others. For example, in May 1978 about 26% of Indiana's workers were employed in durable goods manufacturing, and about 5% of the state's workers were employed in the transportation equipment industry. In comparison, 14% of U.S. workers were employed in durable goods manufacturing and 2.2% were employed in transportation equipment manufacturing.

Indiana's lower structural-frictional unemployment rate may be attributed to level of education. A higher proportion of the Indiana work force than of the national work force has completed high school. This suggests a more mobile and well trained work force.

Summary

Indiana benefits from lower structural-frictional unemployment. The state's problem of high unemployment during a recession is tempered by its rapid decreases in unemployment when the national economy recovers.

APPENDIX 1

Okun originally formulated the relationship between unemployment and the GNP gap as:

$$U_t = a + b \text{ Gap}_t \quad (1)$$

Where U_t is the unemployment rate and Gap_t is the GNP gap at time period t . The GNP gap is measured as the difference between actual real

GNP and potential real GNP⁴ expressed as a percentage of actual real GNP. Since the real GNP is an estimate of the nation's output of goods and services, as the gap between actual and potential real GNP widens due to a recession, the demand for labor is expected to fall, thus causing an increase in unemployment. The coefficient b shows the extent to which the unemployment rate responds to changes in the GNP gap.

Since the second term of the equation controls for the cyclical determinants of unemployment, the intercept term a is an estimate of structural-frictional unemployment. In Okun's original formulation, a was assumed to be equal to 4.0, which was the most widely accepted estimate of the full employment rate in the early 1960s. Okun then estimated b to be equal to .33, suggesting that a 3% decrease in the GNP gap would be necessary to reduce the unemployment rate by one percentage point.

More recently, economists have come to agree that the full-employment unemployment rate has not been constant at 4.0% of the work force but has been steadily rising. This rise has been attributed to the growing proportion of women and teenagers in the work force. As a result, Tatom has introduced a revised version of Okun's Law:

$$U_t = UF_t + b \text{ Gap}_t \quad (2)$$

where UF_t is the full employment or structural-frictional unemployment rate. Tatom's version of Okun's Law allows for a variable intercept that takes into account the effect of demographic changes in the labor force on unemployment rates. Tatom estimates b to be around .45, which implies that slightly more

⁴ Potential GNP is the value of GNP that could be attained if the economy were at full employment. It should be noted that this is an amorphous concept that does not have complete acceptance in the economics profession. Further discussion, both pro and con can be found in Okun, Perry, Rasche and Tatom, and Lucas.

than a two percentage point reduction in the GNP gap would reduce the unemployment rate by one point.

We apply Tatom's model to an analysis of unemployment rates in Indiana. The model is:

$$U_t^i = b_1 UF_t^{US} + b_2 Gap_t^{US} \quad (3)$$

where U_t is the annual unemployment rate in the state of Indiana, UF_t is the full employment rate in the U.S., and Gap_t is the real GNP gap for the U.S. Since data are not available for the state full-employment unemployment rate, we attempt to estimate that rate by the first term on the right hand side of equation (3). We assume that the state full-employment unemployment rate is related to the national rate. In so doing, we have assumed a constant ratio between the full-employment unemployment rate for the state and that for the U.S. as a whole. It is possible that the composition of the labor force in the state has changed in a different manner than the labor force of the entire U.S. If that has occurred the assumption of a constant ratio does not hold up and the equation is misspecified. This may account for the low Durbin-Watson statistic for the state, although the Durbin-Watson is still not significant. For the U.S. b_1 should be equal to one, in which case equations (2) and (3) are equivalent.

For an individual state b_1 may be greater than or less than one. If b_1 is greater than one, the full-employment unemployment rate for that state exceeds the national rate. The coefficient b_2 indicates the responsiveness of local unemployment rates to the national business cycle. A higher value for b_2 indicates that that state experiences more cyclical unemployment than the nation as a whole for any given business downturn.

The empirical results reported below show that Indiana's full-employment unemployment rate is .85 that of the national rate. Indiana's cyclical responsiveness to a one percent increase in the GNP gap is greater than that of the U.S. (.56 vs .44). All variables are statistically significant at one percent and the entire equation has strong explanatory power as indicated by the high R^2 values.

APPENDIX 2—SOURCES OF DATA

Indiana and the United States Unemployment Rates are annual figures for the years 1950-78. **Source:** *Survey of Current Business*, Bureau of Economic Analysis, Department of Commerce. Various issues.

Regression Estimates of the Unemployment Model

$$U_t^i = b_1 UF_t^{US} + b_2 Gap_t^{US}$$

	b_1	b_2	R^2	F	DW
United States	.986698 (16.2)	.44189 (7.58)	.95	246.8	1.82
				Rho = .5779	
Indiana	.850983 (22.3)	.56044 (9.77)	.98	709.3	1.47

Real Gross National Product, annual figures for the years 1950-78. Source: *Economic Report of the President*, Council of Economic Advisors, Washington, D.C. (January, 1979).

Potential Gross National Product. Source: Rasche, Robert H. and Tatom, John A. "Energy Resources and Potential GNP," *Federal Reserve Bank of St. Louis Review* 59 (June 1977).

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Indiana Gross State Product—1978¹

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The Division of Research has recently received revisions for state personal income and farm income data as well as new figures for estimating gross state product for 1978. (See table on page 7.)

In current dollars most sectors of Indiana's economy grew substantially in 1978. Farm and mining were the exceptions. In real terms (adjusted to real dollars by use of the GNP deflator corresponding to each sector), while

the increase in Indiana's GSP of 3.9% compared favorably with the 1977-78 growth in real GNP of 4.6%, the state's farm and mining sectors slumped badly. An examination of GSP as a percent of U.S. GNP by industrial sectors confirms both this loss of national share for those two sectors as well as the relatively stable share for the state as a whole.² The graph on page 8 shows Indiana's GSP as a percentage of U.S. GNP for 1958 through 1978. Indiana's share of the national economy, grew erratically

¹This article updates previous estimates of Indiana's gross state product (GSP). Louis West, "Indiana's Gross State Product," *Indiana Business Review*, 55 (1980): 9-11.

²The six-page computer printout of data for 1958-1978 is available from the Division of Research without charge.

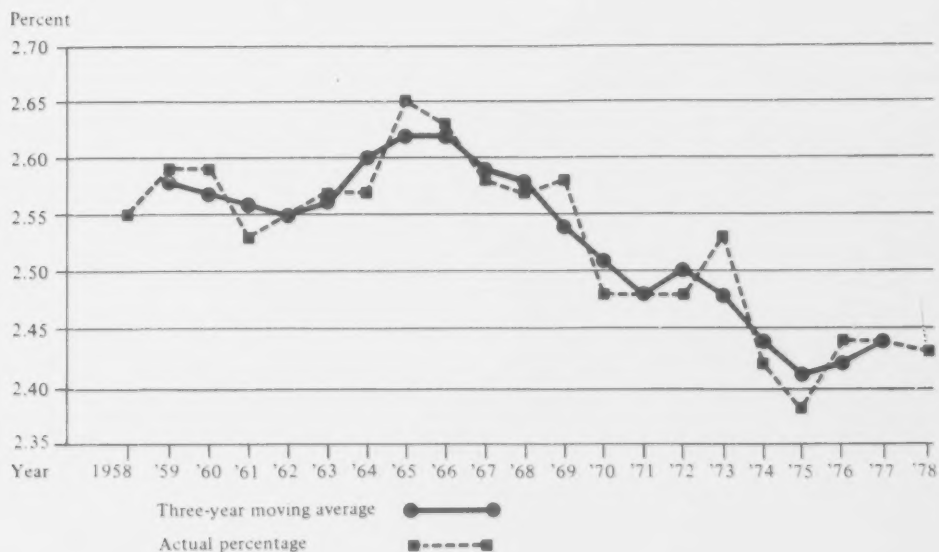
Indiana Gross State Product: 1977 and 1978

	Millions of Current Dollars		Percentage of U.S. GNP		Percent Distribution		Annual Rate of Nominal Growth (percent)		Millions of Constant (1972) Dollars		Annual Rate of Real Growth (percent)	
	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978
Farm	1,775.1	1,852.7	3.61	3.11	3.82	3.58	-7.58	4.37	1,239.3	1,063.7	-7.51	-14.16
Mining	534.0	570.7	1.11	1.04	1.15	1.10	9.75	6.87	220.0	215.7	-0.06	-1.95
Contract Construction	2,066.4	2,363.8	2.47	2.48	4.45	4.56	18.36	14.39	1,400.9	1,468.2	11.14	4.79
Durable Manufacturing	13,628.9	15,623.7	4.97	5.00	29.35	30.16	16.36	14.63	9,572.3	10,185.4	8.45	6.40
Non-Durable Manufacturing	4,006.1	4,337.5	2.20	2.21	8.63	8.37	10.61	8.27	2,934.4	3,041.9	7.80	3.66
Trade	7,291.4	8,029.8	2.26	2.23	15.70	15.50	9.55	10.12	5,145.8	5,325.8	4.76	3.49
Finance Insurance Real Estate	5,061.6	5,476.5	1.89	1.83	10.90	10.57	11.48	8.19	3,890.2	3,962.6	4.98	1.86
Transportation Communications Utilities	3,765.8	4,227.9	2.24	2.22	8.11	8.16	12.14	12.27	2,794.2	2,978.3	5.95	6.58
Services	4,213.8	4,768.4	1.79	1.77	9.07	9.21	14.74	13.16	2,861.5	3,001.2	6.43	4.88
Government	4,016.8	4,457.6	1.69	1.72	8.65	8.61	8.87	10.97	2,801.4	2,903.1	-1.24	3.63
Other	74.5	88.1	1.26	1.24	0.16	0.17	19.82	18.36	49.7	56.3	5.44	13.09
TOTAL	46,434.9	51,797.2	2.44	2.43	100.00	100.00	11.98	11.54	32,910.1	34,202.7	5.73	3.92

until 1965, dropped in 1970, and fell steadily from 1973-75. In the last three years Indiana's share of the national economy has leveled out. These patterns tend to correspond roughly to national business cycles. Generally within a year of the full onset of the last three national recessions (1960, 1970, 1974) Indiana's GSP

fell with respect to U.S. levels. This drop in share of GNP suggests that Indiana's economy is more sensitive, therefore more volatile, during periods of national decline. There is also indication in these figures of a long-term, gradual decline in Indiana's share of the nation's output.

Indiana Gross State Product as Percentage of U.S. GNP



A Statistical Approach to Real Estate Appraisal: An Analysis of the Fort Wayne Market

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INTRODUCTION

For many years, real estate values in the Fort Wayne market have lagged behind those in other cities in the nation. Recently this gap has begun to close. In Fort Wayne the average price of a new home during 1977 was \$52,377. The city's monthly average recorded for April 1979 was \$66,600—almost in line with the national average of \$71,300¹. Fort Wayne is a growing city and is in the process of annexing several existing subdivisions. Development of many new subdivisions is underway.

NOTE: The authors are indebted to Kevin Allen, an I.U.-Bloomington student, for his assistance in gathering the data for this study.

¹SOURCE: Department of Housing and Urban Development and Department of Commerce, Bureau of the Census, Construction Reports, *New One-Family Houses Sold and For Sale*, May, 1979, plus Fort Wayne MLA, April, 1979, real estate activity summary report.

Increases in real estate activity have expanded the amount of data available to Fort Wayne's real estate appraisers. The trends mentioned above underscore the need for more efficient, economical, and objective methods of analyzing this data.

Cost and market-value approaches are the traditional means for real estate valuation. Both methods are commonly employed, either individually or together, when appraising single-family housing. The appraiser who uses the cost approach first calculates the value of the land, then proceeds to add a reasonable estimate of the depreciated reproduction cost of the house and other improvements. The appraiser who uses the market-value approach compares the subject property with other properties that have recently been traded in the market and that are similar with respect to age, construction, condition, location, etc.

Within the last ten years multiple regression analysis has become increasingly popular. Multi-

ple regression analysis is a statistical technique that was developed to measure the joint effect of two or more independent variables upon a dependent variable. In a real estate appraisal application the independent variables are the locational and structural characteristics of the house. The dependent variable is the final selling price of the property under consideration. Our purpose is to illustrate how multiple regression analysis can be employed as a tool for determining the market value, i.e., predicting the selling price, of single-family homes in the Fort Wayne market. We make no attempt to rigorously discuss or to resolve a number of the complex theoretical and statistical problems that are widely recognized in the current appraisal literature. Our objective is to bring this relatively new approach to the attention of practitioners in the appraisal field and to generate additional interest and further research in the use of multiple regression analysis in real estate appraisal.

THE DATA BASE

Data for this study consisted of a random sample of 201 sales reported in the 1978 sales book of the Multiple Listing Association (MLA) of Fort Wayne. The sample was drawn from a population of several thousand houses sold in the northeast quadrant of the city. This northeast quadrant comprises older houses located not far from the downtown area and newer houses located in a number of rapidly growing suburban areas. Since the model is designed to appraise the typical single-family home, properties that possessed highly unusual or unique characteristics, i.e., houses 50 years old or older, properties with excessively large lot sizes, houses with unusually spacious living areas, etc., were omitted from the sample.

The property characteristics selected in the model were limited to those variables reported in the MLA listing book. Twenty-three locational and structural characteristics that might

have a significant influence upon selling price were identified.

Locational Characteristics

The importance of location in real estate appraisal is well-known. In an effort to estimate locational impact, three variables, ADD (addition), CITY, and WOODED were included in the model. The entire sample of homes was categorized into five types of addition: exclusive, good, average, poor (or questionable), and others. The "others" group included a large number of homes that either were not located in a platted subdivision or were in a subdivision whose characteristics were unknown. Local realtors were asked to rank from poor to exclusive the larger more readily identifiable additions. The variable CITY was used to identify whether or not the property was located within the Fort Wayne city limits and was included in the model to help measure the net influence of city services, taxes and locational factors upon real estate values. Generally, homes located on wooded lots and those adjacent to forested areas command a higher price in the market. Based on property descriptions in the MLA listing book, each home was classified as having either a wooded or an unwooded lot.

Structural Characteristics

Eighteen variables were selected to measure the unique structural characteristics of a property.

As a rough measure of condition the age (AGE) of the house was recorded in years. Newly constructed houses that had been sold for the first time were treated separately and designated by a NEW house variable. Rather than simply assigning a zero value to age, this NEW house variable was employed in an attempt to identify the value of a buyer-decorated or designed house, plus the possible psychological advantages a new house may

possess. Furthermore, new houses typically lead the market in a period of rapidly rising construction costs.

A variable labeled SEWER was included to designate whether or not the property had sewer or septic facilities. The type of foundation (FOUND) was identified as basement (full or partial), crawl space, or slab. Both type and age of the present heating system were included: type was categorized as gas, electric, oil, or others; age was recorded in years. Garage size (GARAGE) was measured in square footage. The lot size (LOTSZ) was measured in square feet for each property and was estimated from the available information. Four basic groups—all aluminum, all wood, masonry, or some combination—categorized the type of siding (SIDING) used in construction.

Several variables were used to measure both the amount and the allocation of living space available for each house. These variables included: the size of the total living area measured in square feet (SQFT), and the total number of rooms (TOTRMS), total number of bedrooms (BEDRMS), and total number of baths and half-baths (BATHRMS). Construction style (STYLE) was identified as: ranch, two-story, or other (tri-level, Cape Cod, duplex, etc.). The variable AIRCOND designated whether or not the house had a built-in central air-conditioning system. The variable FIREPLACE indicated another popular feature—a built-in fireplace. A remodeled kitchen typically will include either a built-in dishwasher or garbage disposal or both and generally will add to the value of a house; thus, the two variables, DISHWASHER and DISPOSAL, were included to capture the effect of a modern, remodeled kitchen. Two additional variables included in the model measured the impact of financing available and the current rate of inflation. The variable TERMS incorporated the influence of two major types of financing options, cash/conventional and assumable loans, that were available for each property. MONTH indicated the

month in which the house was sold. The regression coefficient associated with this variable approximates the average monthly dollar inflation rate for homes in the northeast quadrant during 1978.

A base category was established for each of the categorical variables identified above; the regression coefficient associated with each of the remaining groups indicates the market value of that category relative to the designated base. For example, the regression coefficient for FIREPLACE indicates the additional market value associated with having a built-in fireplace since a house without a fireplace was designated as the base. The base category for the foundation variable (FOUND) is a house built on a slab, and the regression coefficients for crawl-space and basement represent the additional market value associated with these types of foundation. Table 1 provides a list of selected characteristics for our sample of 201 homes.

THE MODEL

Our multiple linear regression model has the general form:

$$Y = a + b_1x_1 + b_2x_2 + \dots + b_kK_k$$

where Y is the calculated value of the final selling price, and the x 's are the various property characteristics discussed above. The constant term a and the regression coefficients $b_1 \dots b_k$ are calculated during the computer regression analyses. The constant term indicates the component of appraised value that is not related to the set of explanatory variables and that would be common to all homes regardless of their unique locational and structural characteristics. The regression coefficients for each of the continuous explanatory variables, such as lot size or age, indicate the average impact of an additional square foot of property or an additional year of age on the house's market value. To assist in identifying which of the 23

TABLE 1
Selected Housing Characteristics: Estimation Sample

<i>Characteristics</i>	<i>Mean</i>	<i>Standard Deviation</i>
CONTINUOUS VARIABLES:		
Age (Years)	10.8	11.1
Total living area (Sq.Ft.)	1,542	433
Lot size (Sq.Ft.)	11,905	5,216
Number of bedrooms	3.3	0.6
Number of baths	1.8	0.6
Selling price	\$47,087	\$16,250
CATEGORICAL VARIABLES:		
	(%)*	
Style		
Ranch	59.2	
Two story	29.9	
Other	10.9	
Foundation:		
Slab	70.1	
Crawlspace	11.0	
Basement	18.9	
Sewer	92.0	
Air Conditioning	43.8	
Fireplace	61.7	
Wooded lot	16.9	
New home	21.9	
Addition:		
Exclusive	6.0	
Good	12.9	
Average	37.8	
Poor/Undesirable	8.0	
Other	35.3	
City	36.8	

*Percentage of sample houses with these structural characteristics.

explanatory variables should be included in the final predictive model, we used a stepwise approach that entered individual variables into the regression analyses according to their relative explanatory or predictive power. A 95% confidence level was selected to determine which variables appeared in the final model.

MODEL RESULTS

The coefficient of determination, $\bar{R}^2$, indicates that the set of 14 independent variables identi-

fied in Table 2 as statistically significant explain 90% of the total variation in selling price for our sample of 201 houses. All of the regression coefficients carried the expected sign. For example, SQFT and LOTSZ have positive coefficients that indicate that each additional square foot of living space or of lot size will add approximately \$15.74 or \$0.145 to a property's value. The negative coefficient on AGE indicates that an additional year of age tends to reduce the market value an average of \$440 per year. The model results indicate that a house

with a FIREPLACE will sell for roughly \$3,235 more than a comparable house without a fireplace. The negative coefficient on STYLE: OTHER (Cape Cods, tri-levels, etc.) reflects the fact that ranch is the base style category, and that it is generally less expensive to build a Cape Cod or a tri-level than a ranch with the same square footage, total number of rooms, etc.

The 1978 average monthly inflation rate of \$405 translates into an annual increment of \$4,860 and represents a 10.3% increase for the sample's typical home. The two ADDITION variables (EXCLUSIVE and GOOD) indicate the greater price that a house located in either of these categories would likely command over and above the price that the same house located in the AVERAGE base addition category would bring.

The above discussion concerning the proper interpretation of individual regression coefficients is for illustrative purposes only. Readers

should not attach undue significance to the precise value of each individual coefficient. The presence of correlated housing features and possible interaction effects among the explanatory variables will generate coefficients that may not precisely indicate the true contribution of those variables to the final selling price of the house. For example, the results indicate that CITY is picking up the influence of certain factors that, on balance, have a favorable impact upon home values. Does this positive impact actually measure the net difference between the value of city services received and city taxes paid? The extent to which various non-linear relationships, micro-locational factors, and zoning regulations (such as sewer ordinances) are influencing the results is not clear. Even if one assumes that, in fact, the variable does measure the pure economic effect of annexation, the estimated regression coefficient properly should be interpreted as only a rough approximation of the actual effect. On

TABLE 2
Regression Results

<i>Variables - in Order of Importance (x_i)</i>	<i>Regression Coefficients (b_i)</i>	<i>Standard Errors</i>
Total living space (Sq.Ft.)	\$15.74	\$1.56
Age	- 440	46
Foundation: basement	9,070	1,047
Central air conditioning	2,645	871
Garage	14,00	3.19
Fireplace	3,235	957
Style: other	-4,151	1,218
Baths	3,532	1,236
Month	405	118
Addition: Exclusive	6,677	1,781
Good	3,284	1,223
Wooded	1,810	1,093
City	2,086	953
Lot Size (Sq.Ft.)	.145	.078
Constant	4,822	2,268

$R^2 = .90$ (Adjusted coefficient of determination)
S = \$5,067 (Standard error of the estimate)

the other hand CITY clearly is measuring some factor (or more likely the net effect of a group of factors) that indicates a positive relationship between city boundaries and housing values in our sample.

Furthermore, suppose that an identical sample of houses but a slightly different set of variables was used to estimate home values. One would not be surprised to see somewhat different coefficients for the variables *common* to both models since we are now attempting to measure the same effect (housing values) but are using a different measuring device or model. We would likely allocate housing value in a different manner between the two sets of explanatory variables even if both models were equally effective in their overall ability to forecast. In a statistical appraisal model fitting together the regressor variables as a logical "package" of explanatory terms is much more important than having each separate variable precisely measure its own individual contribution.

FORECASTING ACCURACY

To test the model's overall appraisal capabilities a randomly selected validation sample, composed of 24 houses not included in the original sample, was drawn.

To derive an appraisal estimate for a given house one simply needs to substitute the values for the independent variables into equation (1)

$$Y = a + b_1 x_1 + b_2 x_2 + \dots + b_k K_k$$

and calculate the sum. For example, one of the homes in our validation sample had the following structural and locational characteristics:

Total living space (Sq. Ft.)	1,561
Age (Yrs.)	9
Foundation: Basement	(Yes) 1
Central air conditioning	(Yes) 1
Garage (Sq. Ft.)	609
Fireplace	(Yes) 1

Style: Other	(No)	0
Baths		2
Month		9
Addition: Exclusive	(No)	0
Good	(Yes)	1
Wooded	(No)	0
City	(No)	0
Lot Size (LTSZ)		11,900

When these values are substituted we get:

$$\begin{aligned} Y = & \$15.74(1,561) - 440(9) + 9,070(1) \\ & + 2,645(1) + 14,00(609) + 3,235(1) \\ & - 4,151(0) + 3,532(2) + 405(9) \\ & + 6,677(0) + 3,284(1) + 1,180(0) \\ & + 2,086(0) + .145(11,900) + 4,822 \\ Y = & \$64,627 \end{aligned}$$

The forecasted selling price (Y) for this house was \$64,627, but the actual selling price was \$66,000—an underestimate of \$1,373. We evaluated each house in our validation sample in this manner. Table 3 shows the average values for the validation sample and their associated prediction errors.

TABLE 3

Validation Sample Results

Average

Forecast Price	\$47,760
Actual selling price	47,513
Absolute error ¹	2,630
Percentage error ²	5.5%
Sample size	24

¹The average absolute error represents the average dollar difference between the selling price and the forecast price regardless of sign.

²The average percentage error is the ratio of the average absolute error divided by the average selling price.

SUMMARY AND IMPLICATIONS

The regression results we have described indicate that current multivariate techniques can be applied effectively in the real estate appraisal area. The extraordinarily high $\bar{R}^2$ result plus the logical size and sign of the regression coefficients suggest that this statistical technique is capable of both forecasting and allocating housing values on a logical basis. Given that the technique appears to be a workable approach for single-family real estate appraisal, a number of important applications are possible. The most obvious advantage of the technique is that it provides the real estate broker or the lender's real estate appraiser with a relatively simple, consistent, and unbiased approach toward appraisal. The multiple regression model could provide the user with an initial estimate of a property's current market value; the appraiser could then readily adjust this benchmark appraisal up or down depending upon his or her subjective evaluation of a variety of factors not included in the model. Furthermore, a consistent, objective set of coefficients used by all appraisers should reduce the time and cost involved in obtaining sound appraisal estimates and could help reduce the speculative element present in a growing number of real estate markets.

The second major application of multiple regression appraisal techniques lies in the field of property tax assessment. A taxing authority could record the significant locational and structural characteristics of the existing stock of housing under its jurisdiction and could virtually reassess its entire residential tax base in a matter of hours based upon the results of a series of regression models comparable to the one reported in this study. The local multiple listing associations in many major municipalities (including Fort Wayne) have already adopted computer-based data retrieval systems that easily could be modified to handle a

variety of multiple regression programs currently on the market. Once again the advantages of consistency and objectivity are readily apparent. Furthermore, the ability to appraise and reassess at more frequent intervals would eliminate difficult adjustments necessitated by dramatic changes in the value of the tax base and would insure that local property tax receipts keep pace with inflation and with the rising cost of providing public services.

Regression analysis does have its problems and limitations. A number of complex statistical issues such as multicollinearity, interaction effects, simultaneous equation and reduced form estimation problems, plus identification of the most appropriate functional form, have not been addressed fully. At a less technical level, the multiple regression approach requires an extensive data base that must be updated continuously to provide the most reliable model possible. Even when the appropriate data base is available the model's ability to appraise or predict is somewhat limited since the model is best suited to appraise the (typical) single-family home. At the same time individual real estate brokers are faced with their own sets of data limitations, and their own margin of error in appraising is widely recognized. Thus each approach has its own unique data problems, but with the multiple regression approach the problems tend to be somewhat more subtle and technical in nature.

Furthermore, the current multiple listing price may or may not be a good indicator of a property's long-term intrinsic value, especially in the area of property tax appraisal. For instance, transaction costs are incorporated into the appraisal estimate in the form of average brokerage commissions. Additionally, short-term fluctuations in supply and demand conditions may force current market prices to deviate from their long-run equilibrium value. A good deal of additional research is needed to insure that the multiple regression approach

fulfills its inevitable role as a useful and effective tool for market price-appraisals and for property tax-appraisals.

Several other areas for research currently exist. Among these are the use of the multiple regression approach in the formulation and implementation of municipal annexation policy. Preliminary evidence gathered in our present study shows that the multiple regression technique may ultimately prove useful in helping to identify and quantify the relative costs and benefits associated with alternative annexation proposals.

Additional research to determine the temporal stability of the regression coefficients is necessary before reliable forecasts of future housing value can be achieved. At the same time, multivariate statistical techniques such as regression should ultimately prove useful in analyzing the interactions of changing preferences, construction costs, and alternative methods of financing in today's dynamic real estate market.

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The Business Outlook

A Mid-Year Review

Division of Research
School of Business / Indiana University

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INDIANA BUSINESS REVIEW

VOLUME 55

JUNE 1980

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THE BUSINESS OUTLOOK A Mid-Year Review

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The Panel Discussion was presented at the Thirty-Fourth Annual Business Conference in Indianapolis on April 29, 1980. Sentences that update participants' remarks appear in italics in brackets.

The outlooks from various Indiana cities were written during the first weeks in May.

INTRODUCTION TO THE MID-YEAR REVIEW:
A MESSAGE FROM THE DEAN

These are times of considerable doubts and concern about the American economy. The daily news reports give indications of an adverse turn in employment and output but some favorable progress on the inflation front. On April 29 of this year a panel from the School of Business, joined by a distinguished member of the business community, offered their views on the balance of this year and the outlook for the years ahead.

In the following pages we offer the comments of this well-received panel as they were made at the Thirty-Fourth Annual Business Conference of the Indiana University School of Business. I asked each panelist to first consider short-run forces and then turn to the longer-term outlook. Their views are reproduced here as they were presented at that time because the news of the past few weeks has not dated these remarks but reinforced them. The points made by the panel about inflation, international factors, the midwestern economy, and the automobile industry have continued validity.

In addition, this issue of the *Indiana Business Review* continues our practice of a semiannual review of business conditions in the various areas of the state covered by our colleagues. Local conditions reflect national issues, but their diversity demands specific attention.

The stresses of today, however, can be overplayed. The balanced views in this issue remind us of the continuing problems as well as the sustained promise of the nation's economy.

A handwritten signature in dark ink, reading "S. F. Otteson". The signature is fluid and cursive, with the first name "S. F." and the last name "Otteson" clearly distinguishable.

Schuyler F. Otteson, Dean
School of Business
Indiana University

The National Economy

THE ECONOMY IN PERSPECTIVE: A PANEL DISCUSSION

This panel discussion took place at the Thirty-fourth Annual Business Conference, of the Indiana University School of Business and the School of Business Alumni Association, in Indianapolis on April 29, 1980. The discussion was recorded and then transcribed for use in this issue of the Indiana Business Review.

Panelists were: Schuyler Otteson, Dean; Eugene Brady, Chairman and Professor;† Lawrence Davidson, Assistant Professor;‡ Michele Fratianni, Professor;‡ Jacques Maroni, Environmental Research and Energy Planning Director, Ford Motor Company, Dearborn, Michigan; and Morton Marcus, Research Economist, Division of Research.**

WHERE ARE WE?

INTRODUCTION

Eugene Brady. Most of you are aware that the nation is on the brink of a recession. We'll talk later about the length and the magnitude of that recession, but the question we have to address is, What happened to the 1979 recession that most everyone was expecting? Most forecasters thought we'd have a recession in late 1978, and in October 1978 Mr. Blumenthal, then secretary of the Treasury, made his first forecast that interest rates would turn around and start to decline with a decrease in economic activity.

We went through the four quarters of 1979 without a recession, as our outlook panel for last year had correctly forecast. The growth rate for the first quarter of 1980 was a +1.1 percent, stated at a seasonally adjusted annual rate. There are indications that the economy at

the present time is in very much the same position it was in late 1973 when we had the worst post-war recession.

Why didn't we have a recession in 1979? One of the major reasons is that monetary policy was simply too easy for the entire calendar year. What we had was a negative real rate of interest, and when it was adjusted for taxes, the rate of interest was negative for the last two or three years. As a result, mortgage installment credit was attractive. Consumers bought housing, automobiles, and durable goods of all kinds. Even though real income was flat or declining, we had a surge of credit. Even the Saturday Night Massacre of the Fed on October 6, when the discount rate was up to what we thought was a horrendous twelve percent, didn't seem to turn off the money supply. The Fed changed their definition of the money supply and in just the last few weeks we have had a real increase in monetary stringency and the real rate, for the first time, has become negative and sharply negative. You know the implications of that for housing, for auto-

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mobiles, and for consumer installment credit. But here we are, on the brink of a recession, and we'll try to figure out, as the panel goes on, how bad it's going to be.

INTERNATIONAL SETTING

Michele Fratianni. My job is to put the U.S. economy in the worldwide setting. I want to start by making some remarks about 1979, which was characterized by very brisk expansion in industrial production in Western Europe and Japan, stable unemployment rates in those countries, and a rising inflation rate, plus continuous up-and-down, yo-yo patterns in the exchange markets.

The volatility in the exchange markets of various currencies reflects, to a large extent, the fact that inflation rates in the world are different. The inflation rate goes from a minimum of four percent in Germany to rates of thirteen percent in this country in 1979, up to eighteen percent and nineteen percent in Italy and the U.K. Given the structure of inflation rates in the world, it is no wonder that the volatility was as high as we've seen.

In addition, the exchange market reflects a variety of shocks that have come upon it, such as oil increases, and a variety of country effects that are reflected immediately in this market, just as the stock market reflects news of importance for a company. The dollar has been able to recover somewhat in the exchange market, largely because of interest-rate increases that have been at a record level, not because of an improved performance of the U.S. economy. The British pound, which for many, many years has been a very weak performer as a currency, has recovered, not because of the underlying fundamentals of the U.K. economy, but mostly because the oil discoveries in the North Sea have given a boost in the net wealth of that nation. Britain has

really improved the performance of the pound by joining, not formally but informally, OPEC.

The big event of 1979 was the increase in oil prices, the biggest increase since 1973. The oil price jumped about sixty percent, and came at a time when most European economies, and that of Japan, were trying to do a very fine balancing act, propping up sluggish economies, on the one hand, and trying to deal with record high inflation rates, on the other. The German Government, for example, was already on an expansionary course at the end of 1973. Germany had increases in government expenditures and was planning to cut taxes. The Prime Minister of France had launched an almost historical campaign to make the French economy competitive by striking down a variety of regulations that had been plaguing economic performance. The French economy has always been highly regulated, from the price of bread to the price of industrial products. Everything was mandated by the Treasury. In the United Kingdom, Mrs. Thatcher was on a similar course, striking down regulations that were hampering the growth of the British economy.

The uncertainty in 1980 is not so much about the extent of the recession, but rather the kind of reaction policymakers will have to this enormous price increase for oil. Are the policymakers going to accommodate the jump in oil price with an expansionary monetary policy? Or are they going to be conservative, that is keep down the money supply so as to control the rate of inflation—not cause it to abate, but control it—while perhaps leaving the budget deficit to take up the slack due to recessionary phenomena?

My forecast is that caution is in order. Most policymakers have been burned by the 1974-75 experience in inflation rates. They are, therefore, willing to be much more conservative with money policies and to let the budget adjust, perhaps, to recessionary tendencies. The overall term I will apply for 1980 is *stagflation*: higher inflation rates, and lower output all over the world.

This naturally fits back into the U.S. economy to the extent that the U.S. economy exports to these industrialized nations. I will not count on the dollar to perform as well in the exchange markets as it has in the last few months. That performance was somewhat marred by historically high interest rates that attracted foreign capital into the U.S. The underlying factors in the U.S. are high inflation rates, much higher than all over the world. Compared to Germany there is a differential of fourteen to fifteen percent in inflation rates, and there are similar spreads compared to the Netherlands and to Belgium. So with respect to the major currencies, I would say that the dollar will decline in 1980. For those who want to invest in foreign assets, I recommend, keep short and keep diversified.

CURRENT INDICATORS

Lawrence Davidson. The inflation rate, the unemployment rate and the interest rate are probably three of the most widely examined indicators of the economy's health. Let's take a look at 1979 or where we've been. The unemployment rate was low all during 1979 and averaged about 5.7 percent. But it started to rise. As recently as this March it was up to 6.2 percent, and all indications are that we're going to see it rise quite a bit for the next few months. [*Since the conference it rose to 7 percent in April and 7.8 percent in May.*] The inflation rate, as measured by the Consumer Price Index, has been increasing ever since about 1976. It was 10 percent in 1973 and 13 percent in 1979. In the beginning of 1980 it has already been up to about 17 percent. Finally interest rate behavior has been extremely erratic this year. For example, the rate on 90-day treasury bills has risen by almost 600 basis points from March 1979 to March 1980. Even long-term bonds have shown similar, although not quite as pronounced, behavior, increasing

about 350 points. In just the last couple of weeks interest rates appear to have peaked. The question right now is, Have they really finally peaked? If so, how much are they going to come down, and how soon?

The behavior of interest rates, employment and inflation is very complex. Rather than a superficial discussion of all the factors, I want to focus on only one of the crucial aspects for 1980. Modern macroeconomic theory links together these three variables by expectations, particularly inflationary expectations. It's not so much the precise value of those expectations that matters. Rather, it's *how they're formed*. Simply put, the expectations hypothesis says that when economic agents come to anticipate a rise in the future inflation rate, this anticipation is manifested in their current behavior and leads to increased wages, increased costs of doing business generally, increased interest rates, and probably a change in the unemployment rate. I say "probably" because the change in the unemployment rate depends on the correctness of the anticipations. For example, if workers overanticipate inflation, then this theory suggests that the unemployment rate will soon rise. One commonly accepted assumption about anticipations is that they are largely affected by recent inflation experiences. Economists call these adaptive or extrapolative expectations. If they're formed this way then the accelerations of inflation in the past fifteen months imply accelerating wages, higher unit costs, and even higher interest rates ahead. Coupled with the forecast of declining economic activity, this certainly implies lower demand in the face of rapidly rising costs. Thus, under adaptive expectations we would forecast a deep recession, a much higher unemployment rate, a mixed showing for interest rates and inflation, and perhaps an inflation rate in the neighborhood of thirteen percent again in 1980.

A recently espoused assumption about inflationary anticipations asserts that these anticipations are based on an analysis, no matter how

crude, of the actual factors that should affect the inflation rate in 1980. Economists call these rational expectations. If they are truly rational, this year we will see a very different picture from the one I just described.

Assume that the rate of growth of economic activity, government policies, oil shocks and housing prices are the most important predictable factors that affect the short-term behavior of inflation, and, therefore, will affect the current anticipation of inflation as well. We've been hearing daily that we're in the early throes of recession, that government policies are going to be restrictive over the near term, that there could be at least a temporary cessation in the rise in oil prices, and perhaps in housing prices too. If this is all properly digested, then the anticipation of inflation will be much lower than in my earlier scenario, and we may be talking about overall expectations in the 10 to 12 percent range instead of in the 13 to 15 percent range. This would mean less wage pressure, a slower rise in unit costs, and perhaps even a precipitous fall in both inflation and interest rates. *[Since this forecast, some short-term interest rates have fallen by about 1,000 basis points.]* The further implication is that if these rational anticipations are more correct and we have planned well for the coming recession, then it will be less deep and prolonged, with only a moderate rise in the unemployment rate by year-end. Such a scenario would produce the following forecast by year-end: inflation of 8 to 10 percent; an unemployment rate averaging around 7.5 percent; and short-term interest rates around 9 to 10 percent. One caveat: the world is probably neither purely adaptive nor perfectly rational. What will happen will probably lie between the two forecasts that I've discussed. Until we have a better way of looking into people's heads we really have very little to go on in terms of describing which set of assumptions about anticipation people will follow and, therefore, which set of assumptions to guide our forecasts.

SPECIFIC SECTORS

Eugene Brady. It's clear that we're at the onset of a recession but no one knows how long and how deep it will be. I'm going to discuss the real components of the economy and make some judgments about this recession.

Things look a lot like they did in 1973, but the one difference seems to be with inventories. The '74-'75 recession, could have been tagged an inventory recession, because a big build-up of unwanted inventories had to be run off, and were run off in 1974. Current data give the impression that inventory/sales ratios, that is, the ratio of inventories to one month's sales, are at a fairly low level by historical standards—about 1.48, stated in current dollars. If you put them in 1972 dollars you get quite a different picture. The inventory/sales ratio has gone up quite a bit because inventories are valued at the time they are acquired, rather than at current dollars. If you put them into constant dollars you get quite a different story, so the inventory picture isn't quite as bright as many people would believe.

I may be a little less optimistic than some, but I'm expecting a recession of four quarters' duration. It will start the second quarter of 1980 and run through the first quarter of 1981. Let me tell you about some of the sectors, and then I'll wind it up with my forecast. This is not pleasant, but I think it's necessary.

Housing has fallen badly. In fact we're probably in the beginning of the worst housing cycle of the post-war period. It's going to be worse than '74-'75. The indicators now are that housing will be less than a million for calendar 1980. My guess is that there will be about 970 thousand housing starts for calendar 1980—a bad year for housing. Most of the consumption function studies depend on real income and on assets. Nominal income has been flat the last couple of months, so that with inflation, real income is then falling. People took quite a beating on assets in the last two or three

months. Existing housing prices have softened. Last year, we got more consumer installment credit financed by second mortgages and refinancing of housing (about forty billion) than we did by consumer installment credit itself (about thirty-two billion). We're not going to have that bailing out for consumption this year, because housing is moving very slowly and existing houses that are selling are offered on contract rather than with financial arrangements made by a financial intermediary.

Really tight credit has come at a peculiarly awkward time for **agriculture** because farmers are having a hard time getting credit for their spring planting. Some of the tightest credit binds are in the small towns in the agricultural sectors. Agriculture is in a squeeze. I'm not talking just about long-term capital formation, or fertilizer, or plant and equipment, or tractors; I'm talking about basic needs. For instance, the slaughter price for pork is less than it costs to grow pork. The slaughter price is twenty-nine cents a hundred; it costs forty cents to get a hog to slaughter weight. There are a lot of people taking a licking in agriculture.

In **automobiles** we've seen the layoffs of the Big Three, and we know the problems of Chrysler. The threshold for imports normally has been 15 percent; we find imports now are in the neighborhood of 25 percent. If dealers had not run into supply shortages, mainly of Japanese imports, the import threshold, the proportion of imports to total sales, would have been even higher than 25 percent. Of that, Toyota and Datsun have claimed 21 or 22 percent of the market. We produced 8.23 million autos in '79. I expect it to be down about 16 percent to about 6.9 million autos this year. Again, automobile manufacturing is tied to energy, and the outlook for energy is uncertain.

It's difficult to examine these major sectors and come up with a very optimistic picture. We don't have any recent figures or forecast on plant and equipment spending, business fixed

investment. When the McGraw-Hill survey and the Department of Commerce surveys come out, I expect them, and other indicators, to show that it's going to be a down year.

Let me give you a **forecast by quarter**, at seasonally adjusted annual rates, for real output. For 1980 first quarter, it was + 1.1, for second quarter it should be -3.8, for third quarter -2.8, for fourth quarter -1.0.

The real output for first quarter 1981 will be -0.8. During the second quarter it will turn around at +0.5. It's rather awkward politically in a sense, because unemployment is always a lagging series. I would guess that the peak of unemployment will come to about 8 to 8.2 percent, and it will fall just about November 3, 1980 (one day before the national election).

AUTOMOBILES

Jacques Maroni. "Short term" has a different meaning for us. The cycle to plan a new car is sixty months, or five years. We decided a long time ago what cars we will be producing in 1982. That's part of our problem. The transition from having too few big cars in 1976 to having too few small cars in 1980 is at the core of the employment problem in automobiles in 1980. The market is divided into two segments. One segment is undersupplied; the very fuel-efficient automobiles. The other segment is demand limited; we have excess capacity to produce large automobiles. We do have a good news, bad news story. Our future is fantastic, because most of the automobiles out there are already obsolete, and we have to replace them. The bad news part of this is that most of our assets are already obsolete also.

You may have heard the following story. Socialism is when you have two cows and you give one to your neighbor. Communism is when you have two cows and the government takes both of them and gives you the milk. Facism is when you have two cows, the government takes

both of them and sells you the milk. And bureaucracy is when you have two cows, the government takes both of them, shoots one of them, milks the other and pours the milk down the drain!

Bureaucracy in our case means regulation of emissions, safety, fuel economy, noise, damageability, and so on. Bureaucracy uses up all of the money we used to make when we were profitable, and in 1980, as you know, we're not. It is going to be quite a problem for us to make the changeover, but I have a lot of hope, and I think we can make the changeover to very fuel-efficient automobiles.

MIDWESTERN ISSUES

Morton Marcus. I don't have to cover as wide a geographic area as my colleagues, just five states from Ohio to Wisconsin. If you look at three of those states, Ohio, Indiana, and Michigan, you have the recession of 1979 that the other economists have missed, because in this part of the country we have been in what amounts to a recession. Employment here has been down in the automobile industry and in the industries that supply the automobile and truck manufacturers. Ultimately, then, declines occur in the steel industry as well. In this part of the country, we are the metal benders, the metal formers, the metal shapers. The employment in primary metals has been down about nine percent. Employment in transportation equipment has been down about fifteen percent.

We are manufacturing states. We are thought of as part of the great farm belt, but we are primarily manufacturing states, and we have been in this recession since approximately April 1979. If the rest of the country is going to get worse, so are we—even more so. Consumers are going to start cutting back on their purchases of other consumer durables that we produce. As the housing market sinks, as new homes are not being built, then the kinds of

things that people put into those new homes will not be bought. The big ticket items—refrigerators, washing machines, dryers—the kinds of things that are produced in the Midwest will not be bought. Unemployment rates in the nation may be around eight percent, but unemployment rates in some areas of the Midwestern states have already exceeded ten percent. In fact, some of our Indiana communities are already approaching twenty percent unemployment. They're trying to match the prime rate! Unemployment rates will continue to increase. As Gene Brady says, unemployment is a lagging indicator, and we're going to have a good deal of bad economic news in the Midwest until the national economy picks up, especially that component of the national economy upon which we depend so heavily, the automobile.

THE DECADE AHEAD

INTERNATIONAL CONSIDERATIONS

Michele Fratianni. In the '60s it was easy to be a forecaster. You could forecast by extrapolating on last year's trend and adding a fudge factor. It was also fun. More often you would tell a good story, rather than a bad one. Now it's unpleasant on both counts. You have to be sharper with your wits because the cycle goes up and down and you cannot extrapolate, and when you tell the story you're left with a very sour feeling because it's always, or most often, a sour story. I don't see anything but bad news for the '80s. I am a pessimist, and I'd like to share some of the pessimism in the form of seven pronouncements that I think are forthcoming not only for the U.S. but for the world economy.

1. We're going to be faced with a price increase of oil relative to manufactured goods. This means that the OPEC countries are going to extract oil taxes increasingly by

pricing goods not in dollars but in terms of a constant purchasing power basket, such as the SDRs or gold. Gold is likely to be one of the favorite candidates to price oil. This means that the terms of trade for manufacturing economies, the U.S., Western Europe, and Japan, will be falling. This means that for every car we produce, we're going to have to exchange for less oil. Oil is going to cost us more and more.

2. The unemployment rate is likely to rise in the first half of the '80s throughout the world, for a variety of reasons, but most importantly because demographic factors are unfavorable. The working-age group is going to rise until 1985-1986. Some respite will be forthcoming in the latter part of the 1980s.

3. The rising trend of the unemployment rate and falling trend in output will depend a great deal on the cost of labor. That is, we can rectify the unfavorable trends of the demographics by lowering the price of labor, by lowering the unit labor costs. Now that's easy to say, difficult to achieve. I don't see anything in the picture throughout the world that will suggest real wages will be falling spontaneously. Organized groups will resist a decline in real wages.

4. Government, under pressure from various groups, will be asked to do impossible jobs, to reconcile irreconcilable goals.

a. They will be trying to neutralize foreign producers' competitive advantages. I do not foresee the Smoot-Hawley Tariff Act of 1930, but we're moving towards that trend. We're going to "control" foreign trade, control it for the best interests of groups A, B, and C. How are we going to do it? We're going to use administrative rules and enforcement controls. We're going to use subtle measures that are very difficult to detect and very difficult to fight against. Such

measures are already being used all over the world for a variety of products. For example, cheese from France going to Italy is left at the border for three days until it spoils. At that time the health inspector will come and say, "The cheese is good, you can let it come in." But the cheese has no value to the market. Another example is Japanese TV sets that are not allowed in Italy because they don't have Italian instructions on the back, and so on.

b. Governments will be trying to subsidize industries. Now that was true in the late '60s and early '70s throughout Western Europe. A lot of elephants—white elephants—were subsidized at taxpayers' expense. It's now coming to the U.S. Milton Friedman used to say very cogently, about ten years ago, "What's the U.S.? It's ten years behind the U.K.," he would say, and with that phrase, he would capture the mood towards more and more subsidy and government intervention. Now if we plot what we're doing today in the U.S. with a variety of sectors and plot it back to Europe ten years ago we can see a lot of matching. I think subsidy is coming.

c. Government will try to prop consumption or these selected types of investment. They will make more transfer payments to us—households and firms—and provide less money for productive investment.

d. The government will experiment increasingly, even though there are obvious failures, with wage and price controls, full employment policies, profit, and corporation accountability.

5. The economic cycle will be shorter and deeper. The recession will become relatively deep and long-lived compared to the past, and the upswing will be relatively

mild and short-lived. In spite of what we hear about gradualism, stop-and-go policies will be prevalent. Stop-and-go policies are inherent in the political system, and will not stop unless the incentives of politicians are changed.

6. Inflation will remain not only high, a fact with which we could live rather well, but variable, and it is the variability rather than the high level of the inflation rate that is going to hurt. The prediction of a variable inflation rate comes because of stop-and-go policies. Priorities change: one day the fight is against high unemployment rates, the next day it's against high inflation rates, so we have a yo-yo cycle.

7. Exchange rates will be flexible for a long time, reflecting the fact that inflation rates throughout the world will not be uniform. Some countries will have thirty percent inflation rates while countries like Switzerland, Japan, and Germany may have only three or four percent. So long as inflation rates diverge, exchange rates will have to diverge as well.

There is a caveat to all my bad prognostications: the age of Keynesian economics might eventually come to an end. After making so many mistakes, we'll be making some more in the '80s but we'll finally see the light. We'll see that we cannot control the economy the way we control a yo-yo. And we're going to have to reassess not only macroeconomics but the application of macroeconomic principles.

LONG-RANGE INDICATORS

Lawrence Davidson. The long-term outlook for inflation, unemployment, and interest rates is for much more of the same. That is, we should not look for the current decade to be any less turbulent than the '70s. Oscillation and marked fluctuation in economic activity should be typical of the 1980s though I may be a little

more optimistic than Mike Fratianni when I say that I believe that by the end of the decade things should progress a little more. Such a forecast is both optimistic and pessimistic. Certainly no one looks forward to the kinds of ups and downs we've had in the 1970s recurring. At the same time I may be overly optimistic in thinking that we will have begun to solve the mystery of economic fluctuation as early as the end of 1980. This forecast is conditioned on certain assumptions about the world; for example, world political stability, U.S. economic and international policies, and domestic institutional change.

Continued international political and economic instability is likely as the rich and poor nations of the world attempt to divide a world economic pie that is growing very slowly. We have to wait and see about various important developments that concern the evolution of the EEC; the cohesiveness of OPEC and non-OPEC countries that export oil; the behavior of other important raw material-producing nations; resolution of conflicts between middle eastern nations, far eastern nations, African nations, etc.

While these foreign considerations are bound to grow in importance we can't neglect economic policies at home. U.S. policies of the last ten years have led to an environment where firms have refused to accumulate capital at historic rates. We are already beginning to get a glimpse of the problems this can cause in the long run in terms of slower productivity and output growth as well as a higher minimally stable inflation rate. Politicians are beginning to pay lip service to supply-side remedies, but President Carter says these policies can't be enacted until the budget is balanced, so what does that tell you about the imminence of these programs? It will take a long time before they begin to offset the neglect of the past. Of course, even if such supply-side remedies are attempted, demand-management policies, the traditional monetary and fiscal stop-and-go policies that have been referred to, will still be

conducted in the 1980s and will still affect our economy. Today the opinion is widely shared that since the rewards of such activity are still an important lure for politicians, we can expect little more than rhetoric about budget balancing. We will continue to hear government officials in high places telling us that if the unemployment rate gets a little too high for their liking then all bets are off for balancing the budget and for future economic stability.

The key to my more optimistic forecast for the '80s has to do with the fact that the share of the government will continue to grow until at least 1985. Let me explain this. The period between now and then will also be one with extremely high fluctuations, high and variable inflation rates and interest rates, and rising taxes. This will be the perfect environment for people to finally get serious about institutional changes. As we make such changes we will have to wrestle prerogatives from our elected officials. We may begin by demanding fully indexed taxes, perhaps a constitutional amendment on government spending, and more protection of private savings from government controls. These and other reforms will all be part of the institutional changes that will allow us to adapt or adjust better to the inflationary and uncertain environment of the first half of the '80s. If such institutional changes do take place, they'll take away many advantages from the politicians who benefit from rising inflation rates. In that changed environment of the late 1980s we can finally get serious about permanent cures for inflation, and perhaps unemployment and stable economic growth as well.

FAVORABLE TRENDS

Eugene Brady. Let me continue some of the things that Larry has discussed and maybe close on an optimistic note. One thing we can say is that Keynesian economics as we've traditionally used it and practiced it over the last twenty years or so is pretty much dead. I agree with

Michele Fratianni, that it died in about 1965 because the Keynesian apparatus was unable to cope with very high rates of inflation that were set in motion by President Johnson trying to fight a war in Vietnam and have a "great society" simultaneously. We're reflecting that. The last two reports of the Joint Economic Committee of Congress, endorse supply-side economics. We find that demand manipulation is not very effective. We've been trying to fight inflation, in a sense, by causing recession. In the early '30s we were looking for prosperity just around the corner. For the last couple of years we've been looking for recession just around the corner as though recession will solve the problem. The kind of recession we're going to have this year will have a very low or small impact on the overall rate of inflation. Rather than depress demand to get at inflation we're going to start increasing supply and this means supply-side economics. We will have changes in the regulatory and institutional structure of the economy that will allow for supply-side increases. We're going to have more growth in real production and in productivity. We're going to rely less on restraining demand to control inflation than we are to, in a sense, boost the supply side.

Another area of optimism is our demographic pattern for the 1980s. The baby boom is past the colleges. We're in a non-growth industry. The "babies" are about to be middle-aged people, and fortunately these are the people who do the high proportion of saving in the U.S. economy. Their savings rate was very low last year and has been low so far the first quarter because interest rates have been negative. Regulation Q and negative interest rates don't give much incentive to save. Now that real interest rates are turning positive we're going to see more competition in the financial structure, and we will see high levels of saving. Couple these relatively higher savings rates with supply-side institutional changes, and I think we'll have the money for capital investment available in the 1980s. I think we will have

increases in both real output and real productivity. Another problem we won't have to worry about is absorbing a very rapidly growing labor force. In the decade just past, we had to absorb millions and millions of people each year into the labor force to keep unemployment at a given level. We will not have nearly that kind of problem because labor-force growth is slowing and will be slower in the '80s than in the '70s.

We're going towards a more competitive financial structure. You may remember that about ten or twelve years ago legislation or programs to change the structure of the financial community in the U.S. started out with the Hunt Commission Report. Earlier this month, that legislation was signed by the President and the so-called Financial Reform Act (Depository Institutions Deregulation and Monetary Control Act of 1980) was passed. This phases out Regulation Q. It defines the money supply as M1A and M1B, and sets reserve requirements on all depository institutions that issue checking accounts. Most importantly, it reduces the cost of reserve requirements for member institutions and has started to decrease the flow of people using the federal reserve system, so I think we'll have a better control system by the monetary authority. We'll have more competition in the financial structure. Coupled with these other things I've mentioned this promises a pretty good decade in the 1980s.

As Michele Fratianni said, it's going to be a tough world out there. One of the problems we may have is avoiding trade wars and the sort of thing we had in the early 1930s. Inflation was sixteen years in the making and it's not going to go away overnight. I hope we can bring the rate of inflation down a percent or two a year in the '80s. That may be wishful thinking, but I hope it's practical.

AUTOMOTIVE FUTURE

Jacques Maroni. It's going to be a decade of terrific activity and a decade of enormous and

almost unlimited opportunity for those who have the nerve to go out and try things that are different from what we've done in the past.

This is not a dying industry. Thirty-five million automobiles and trucks were sold in the world as a whole last year.

Projections in no way suggest that the world is running out of oil. There are 650-billion barrels of proven reserves of oil and another 1,000-billion yet to be discovered. The world has not been drilled like the U.S., where no one expects to discover enormous pools of oil. The U.S. has already peaked in its production of oil, but the world has not peaked. The world is going to continue to be able to produce substantially more oil than it is currently producing. Production is limited primarily by political factors. It's not a geological problem, it's a political problem.

The time has come, however, to start the transition away from petroleum despite the fact that there is a lot of petroleum left in the world. There is the probability that over the next ten, if not fifteen or twenty, years the Saudi Arabian monarchy, the Kuwait Government, and the United Arab Emirates can be, and will be, destabilized by events that we cannot control at reasonable cost. Given that, I think there will be a major interruption of oil imports that will make the Iranian event, the sixty percent increase in price, look like a joke. In 1979, although the price of oil did increase by sixty percent, there was no substantial reduction in world oil production; in fact, it was almost at an all-time high [*62.4 million barrels per day or 2.2 million barrels per day increase over 1978*]. But there is a terrific risk, probably in twenty years, of an event in the Persian Gulf that would have a worldwide impact. It's urgent, therefore, to start the transition away from petroleum. There are many ways of doing this, and I'll mention them briefly.

First, there's going to be a boom in mass transit—buses, fixed rail systems, etc. Now a boom means mass transit is going to at least

double its market share. It's going to go from three percent to six percent of the total. But the real mass transit system is, and remains, the car, and there isn't any practical way we could change that, even if we all decided this afternoon to do it. The car is going to lose about half its weight. By 1990 cars will range in weight from 1,400 pounds for a two-seater to about 2,600 pounds for a family car. Those automobiles can be made substantially more efficient. Some people say double, some people say triple, some people say quadruple. It's primarily a question of cost. Obviously we can manufacture expensive and limited-purpose vehicles that will go eighty-five miles per gallon. The issue is not whether we make the cars more fuel-efficient—of course, we're going to do that. The real issue is whether those cars will still require imported petroleum that will leave us hanging on the petroleum hook. I submit that we have basically six policy choices that we've got to consider and debate.

First, we can decide that we're going to displace petroleum in stationary applications and reserve it for its premium uses and declare transportation to be one of them.

Second, we can rely on gasohol. We can say that we have a lot of set-aside acres, we have capacity to grow corn from which we can make ethanol. Ethanol can be made not only from grain but from any number of other crops that grow in Indiana and other states. We can increase the number of gasohol stations and the volume they sell.

Third, we can say we're going to make synthetic gasoline and synthetic diesel fuel from any number of things, starting with coal and shale. Synthetic gasoline means you can't distinguish it from the gasoline we use now. You can dump it in an old car and the car will run.

Fourth, we can make neat alcohol. That's 100 percent alcohol, not just necessarily ethanol. It can be butanol, it can be methanol, it can be any number of alcohols.

Fifth, we can go for blends of alcohol with gasoline. We can take methanol and ethanol and blend it with gasoline.

Finally, we can go for dual-fuel vehicles. We can make vehicles that run not only on gasoline but also on methane or propane, both of which can be made from coal; or we can have alcohol injection.

Now all of these options are fluid fuel options, either liquid or gaseous fuel. I did not mention electric vehicles. Electric vehicles have been popularized in the Sunday supplements, but they happen to suffer major infirmities. They have a limited range (probably less than a hundred miles). They have limited performance. The battery pack cannot be recycled more than a certain number of times, so every other year you may have to dump it out (good-bye \$1,200) and buy a new one. Not attractive. Now of course we can have a breakthrough, but I don't want to bet on breakthroughs. If we have a breakthrough, we'll have electric cars. Otherwise I think that the only way we're going to get a large number of electric cars in this country is as a result of a new office that's going to supervise gasoline rationing in the United States. Would you believe? That office will eventually require 50,000 employees, and will issue a new currency, which we'll be allowed to trade. Now I hope that eventually all of us will spread the word and explain to people that it would be better to rely on the price mechanism. We can have a tax on motor fuel, we can recycle the tax, and that beats rationing. Nevertheless, that's one of the problems ahead.

My company cannot decide which option is going to be chosen. We cannot decide to make cars that run on alcohol. There is no alcohol on which to run them. The people who would produce the alcohol are not about to make the investment. There are no vehicles that can run on it. We've got a chicken and egg problem. I don't like government intervention, but sooner or later we're all going to understand that the

transition from petroleum to another system, or several other systems, cannot be left to chance. It will become, in my opinion, an item of big political debate within the next ten years.

MIDWESTERN IMPLICATIONS

Morton Marcus. I will go on to the implications of all of this for the Midwest. We have the enormous productive capacity to handle the kinds of industrial changes that are going to take place in this country. The question is, whether or not we're going to have a federal policy that might, at last, be relatively neutral with respect to the distribution of population and the distribution of economic activity. For over fifty years we have had federal policy that has attempted to follow out the manifest destiny of the nation, and that is to bring equality to all regions. Having done that, we now can begin to set new sights for the country. One of those might be federal policy that has some degree of neutrality or at least does not continue the patterns of the past. If we're going to be concerned in the energy area, if we believe that it is possible to bring back the steel industry in the United States, and if we want to conserve energy, then perhaps what we ought to have, and perhaps what we will have, is a reinvestment in the railroads of this country. Certainly we could transport a great deal of our goods by rail. The railroads actually happen to favor this part of the country.

There are some indications that the kinds of problems that the nation faces can be resolved with the kinds of physical plants that we have in this area. We have to have very aggressive state-level policies that would lead to investment by existing firms in the states where they're currently located. We don't need a law that prohibits movement, but an encouragement for existing plants to keep operating in the areas in which they are located because that

has certain social benefits and avoids the tremendous dislocations that can occur.

This part of the country is extremely sensitive to downturns in the national economy. If the kind of particularly gloomy picture that Mike Fratianni has painted (and I don't know how he can go home and shave without cutting his throat) were to come true, this part of the country would suffer. But I think there are much more optimistic scenarios that can be painted for the future of this country, and we are poised to take advantage of them because of the physical plant, the trained work force, the transportation facilities that we have here in the Midwest. The 1980s look relatively good because there's a new willingness to take on problems that we face and to find resolution for them.

ADDITIONAL COMMENTS

Schuyler Otteson. I'm rather surprised that none of the panel has stressed this matter of productivity, the subject of today's conference. If you go back about ten years it's absolutely frightening to see what's happening, what has happened to productivity in this country—we're flat, going down. At the same time if you look at what has happened in Japan and some of the other countries against whom we compete, there has been a phenomenal increase in productivity. I just wonder whether we have any views up here on that subject that might suggest our ability to increase our capacity, our output, and our economic welfare for the next ten years.

Jacques Maroni. Let me compare the relative costs of making cars in Japan and making cars in the U.S. There is no question that cars can be manufactured in Japan at the present time for substantially less than they can be manufactured in the U.S.—identical cars. This has been true for the last thirty-five years. In the '50s

and '60s, the U.S. market was insulated from this kind of foreign competition to a very substantial degree. We had very cheap gasoline in the U.S. We sold it, without tax, in the range of twenty-five cents a gallon. Overseas, gasoline was heavily taxed, and, as a result, our type of vehicle was not in production overseas. Very tiny, very fuel-efficient cars were produced overseas for highly taxed gasoline. This was, in effect, a de facto monopoly for large American cars built in America. It has evaporated in the last five years, and all of a sudden this potential problem, which had been threatening all along, is having to be examined for the first time. But Japan has had a lower cost of production for the last thirty-five years.

Michele Fratianni. This is a measurement problem. We measure productivity of labor by taking gross national output divided by man-hours worked, and productivity of capital by dividing output by the total amount of capital equipment used in producing it. Our total output of goods and services is our Gross National Product. You know, a lot of this equipment that we have bought is really pollution abatement equipment, to clean the rivers. That's not productive equipment. How are we to measure the improvement in the quality of life that we trade off as we devote one less dollar for productive equipment and one more dollar to clean Lake Michigan? And that is a little bit of a problem that we face in this country. In the last six or seven years we have devoted substantial energy and resources to pollution abatement equipment that is not really building manufacturing. In the latest studies of productivity by Edward Denison, the foremost authority on productivity, he explains the decline Dean Otteson was alluding to by saying of sixty percent of it, "I don't know what the causes are." He can explain forty percent but not sixty percent and he has a long list that shows the degree of ignorance we still have about why we are lagging behind other nations.

Schuyler Otteson. We all seem to agree that a good careful look at our whole tax pattern and our incentive pattern for investment in this country needs to get very high priority indeed. People who've been doing a lot of work in this area have told me that the incentive to get into capital formation in Germany and in Japan and certain other places is highly positive, while in this country the incentive for savings, the incentive for investments is negative. You get the escalator clause: the more you have, the bigger the chunk that gets taken away from you.

Lawrence Davidson. Along those lines, just one bit of information. If one takes the 1980 fiscal budget for the Federal Government, which is about to lapse in the end of September, and adds to it the planned budget for 1981, which should begin then, as a nation we will pay almost a hundred billion dollars in increased taxes over the level of fiscal year '79. Adding the two years together gives the largest two-year total ever, of course, a thirty percent increase in total taxes generated by the government over what went before. So if taxes affect productivity, we can look for more of the same.

Michele Fratianni. I'm going to come in on the devil's advocate side. I'm very much of a libertarian, but I can't help noticing that in countries like Belgium and the Netherlands, where government takes sixty percent of expenditures to GNP versus the U.S.'s thirty percent, productivity is about three times as high. Since we have countries where government involvement is about twice as big as it is in the U.S., but productivity is higher, obviously there is no one-to-one relationship between government intervention and productivity of the nation. At least there are counter examples.

Jacques Maroni. I wonder whether we don't have a structural problem in the U.S. Whether we're not looking at the fact that some of the basic industries that we've had for the past fifty

years or longer are no longer the ones that are ideal for this geography and this decade. If that's what it is, a transition from one type of infrastructure to another type, then we ought to address it in that manner, not confuse it with something that it is not.

Schuyler Otteson. Would you like to be more specific about that?

Jacques Maroni. The American people will decide over the next twenty years whether they want to manufacture steel and whether they want to manufacture vehicles in the U.S. It is perfectly clear that motor vehicles can be manufactured outside of the U.S. for less. The question is, Is it in the public interest? We're a multinational company. If we were told, "Would you kindly stop making them here and go make them in Brazil and ship them in"—fine. It's a question of public policy. Now I'm not recommending that, and we're not doing that. We are reinvesting in the U.S. because we believe that's the U.S. policy. But I think that sooner or later there will be protection proposed by the UAW to protect the employment of its members against Japanese competition or Brazilian competition or Mexican competition.

And if that's what it takes to keep the American industry here, then that's what it will take. But we ought not to be deluded into thinking that it's possible to become cost competitive quickly and without any barriers. As I said earlier, this cost differential has been there for thirty-five years. It's not going to evaporate quickly. In the absence of some political decision, I believe the domestic manufacturers will not be adequately profitable to reinvest at the rate that will keep the industry here.

Schuyler Otteson. I'll make one final observation. Over this last seven or eight years we've been circling the state each fall talking about the future, and we've had uncanny success on everything but one item. We've been wrong almost every year, if not every year, on inflation. And whatever we're saying today, I'm afraid we're going to be wrong again for the year ahead. I just can't believe we're going to get inflation down under double digit for 1980 under any kind of circumstance, and we may not get it under where it is now by very much. That's just my own view, and I want to get it in the record so that I can come back a year from now and tell you I told you so.

The Indiana Economy

INDIANAPOLIS

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A national recession beginning in the first half of 1980 was signaled last year when the IMEX-Indianapolis Metropolitan Index of Leading Economic Indicators—turned downward in the second quarter of 1979. As shown in Figure 1, the IMEX has turned downward three or four quarters before national recession during the two previous recessions.

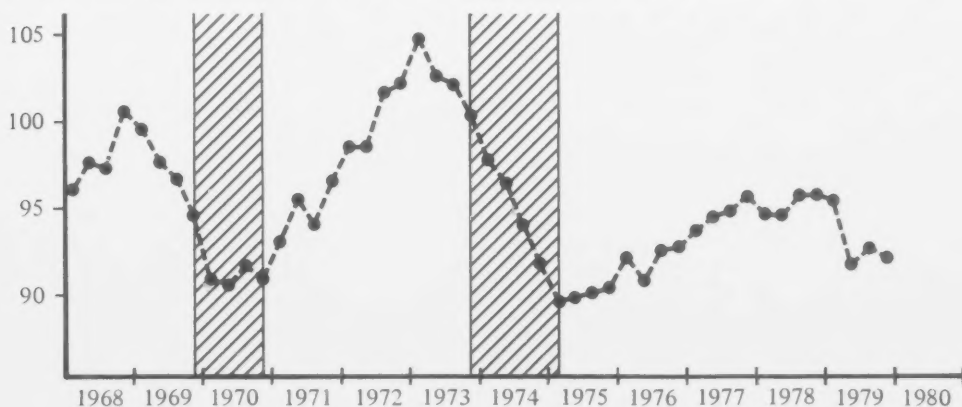
What will be this recession's impact on Indianapolis? The cyclical nature of the national economy is based primarily on durable goods (automobiles and parts) and construction. Indianapolis is basically an automotive parts town.

Ford and Chrysler will be introducing smaller cars this fall to compete with imports and General Motors' X-bodied models. Indianapolis plants will participate in the production of these new models with the Chrysler Foundry manufacturing the four-cylinder engine block and the Chrysler electrical plant producing the starters, alternators, and voltage regulators for the new K-cars. The Ford plant will make the power pumps and steering columns for the front-wheel-drive Ford Escort and Mercury Lynx.

We in Indianapolis will produce parts for the smaller cars, but will the consumers buy them? Historically, when consumers shift to another car manufacturer it may be six or seven years before they return to the former manufacturer. Such a shift is particularly serious when it is from a U.S. manufacturer to a foreign manufacturer. Also, with rising unemployment and stagnant or declining real disposable income nationally, consumers typically

FIGURE 1

IMEX-Indianapolis Metropolitan Index of Leading Economic Indicators



Shaded areas = national recession

postpone the purchase of durable goods, such as automobiles. Therefore, for this fall a greater choice of smaller U.S. cars is certain; the demand for them, as determined by consumer tastes and real disposable income, is less certain.

The Chevrolet plant, which produces sheet metal parts for vans and trucks, will be spending heavily this fall on retooling for a new smaller truck to be introduced in September

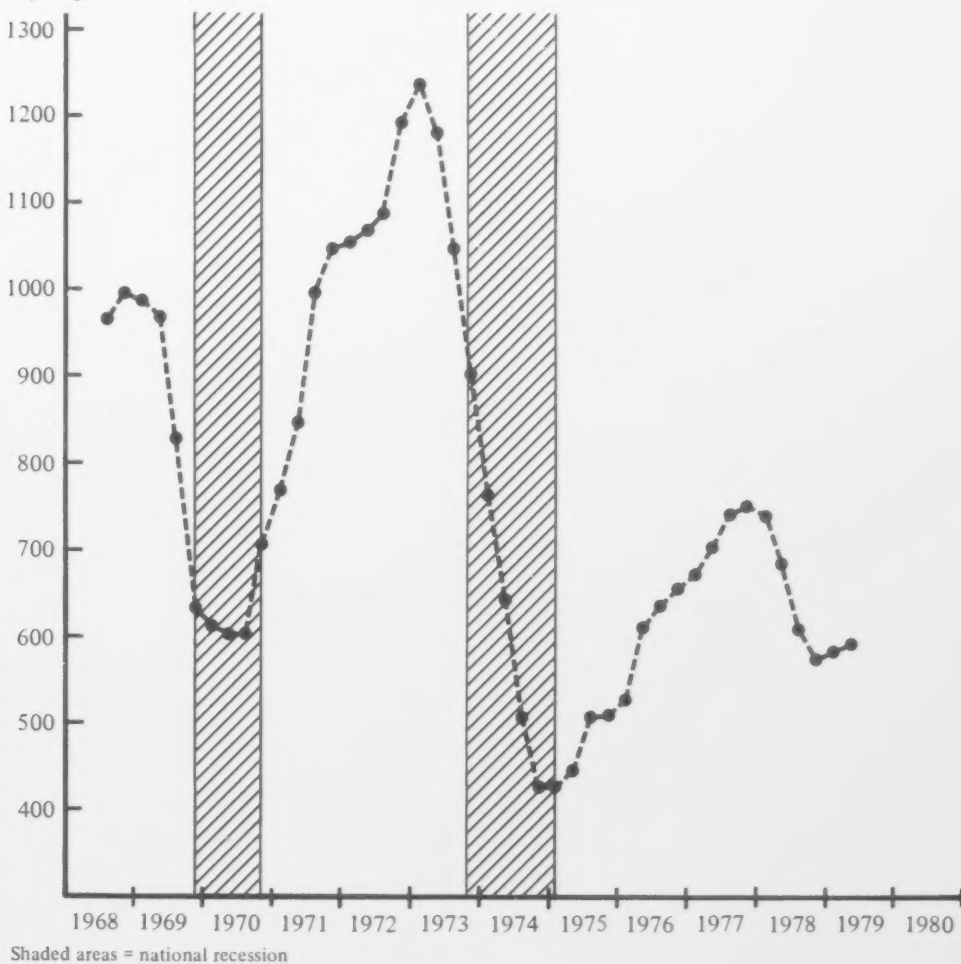
1981. Some of the unemployed Chevrolet employees have been hired by Detroit Diesel Allison, which is experiencing continuing strength in non-automotive demand for transmissions.

Residential Construction

The other highly cyclical industry is residential construction as shown in Figure 2. What about

FIGURE 2

Housing Permits—Indianapolis Metropolitan Area Centered Four-Quarter Moving Average, Seasonally-Adjusted Data, 1968-1979



recovery in housing? Mortgage rates will decline somewhat and innovations in home financing will continue. The Federal Home Loan Bank of Indianapolis in its annual Indianapolis housing vacancy survey in February, 1980, indicated that single-family and multi-family vacant inventories remained at a below normal level. The demographics of housing demand continue to be favorable. However, since real personal income is an important determinant of housing demand, one must be cautious about expecting a significant recovery before 1981. Meanwhile, the slowdown in residential construction and the cost of money capital have combined to reduce private and business demand nationally for telephone sets, thus reducing both employment and production of telephone sets at Western Electric.

As the recession spreads beyond the automobile and residential construction industries, many households and business firms may find themselves in a liquidity squeeze as costs continue to rise and incomes and business receipts do not keep pace. Although firms have controlled their inventories well compared to 1974, there is the risk of a more severe recession than initially forecast because of the weakness in consumer finances. In the automobile-oriented states, workers' incomes have been supported by supplemental unemployment benefits, but some benefit funds are beginning to run out. During 1979, retail sales in the Indianapolis metropolitan area increased about five percent, but after adjusting for inflation in retailing, sales were flat. Therefore, termination of income supplements and rising unemployment could weaken retail sales further.

The Indianapolis metropolitan economy, like the national economy, has been shifting away from a durables-oriented base to a more stable services-oriented one. However, since 1973 as the price of labor has increased less rapidly than capital, labor has been substituted for capital. Therefore, it remains to be seen how a more labor-using economy adjusts in this recession.

Business Construction

Some important changes soon will occur in the downtown Indianapolis skyline. During the fall, structural steel for the 37-story American United Life Building will be erected. The City of Indianapolis has received a \$12.8 million grant under the Federal Urban Development Action Grant (UDAG) program for the West Washington Street Revitalization project. The grant involves a cooperative public-private sector undertaking in which for every one dollar of public money there will be five dollars of private money invested. The grant is from the federal government to the local government which then lends the grant money to private developers. The grant requires a recapture mechanism in which the loans are repaid to the City's redevelopment fund over a payback period. Then the City must use the recycled grant money for other community development projects.

The UDAG grant involves four projects including a twelve-story office and retail building, One North Capitol, at the corner of Capitol and Washington. One North Capitol, a joint venture involving P. R. Duke, Melvin Simon and Associates, and the Downtown Merchants Development Corporation, will cost \$14.5 million. Three million of that will be a loan from UDAG grant funds. Work will begin June 15th and structural steel will be up by the end of the year.

Another project is the renovation of the Indiana Theatre by the Downtown Merchants Development Corporation with a loan of \$1.5 million in UDAG grant funds. The renovation is in addition to the Indiana Repertory Theatre renovation in the Indiana Theatre.

The third project is for the renovation of the H. P. Wasson Building at the corner of Meridian and Washington. The renovation will be done jointly by the Downtown Merchants Development Corporation and Melvin Simon and Associates at a cost of \$11 million with a loan of \$2.25 million in UDAG grant funds.

The fourth project is a 60,000-square-foot retail and 600-car parking complex east of the Indiana Theatre on the site of the old Claypool Hotel. This project is undertaken jointly by the Downtown Merchants Development Corporation and Melvin Simon and Associates, and includes an elevated walkway linking the retail center with Merchants Plaza and a tunnel connecting the Indiana Theatre, One North Capitol Office Building, and the State Capitol. UDAG approval is being sought for a 300-room hotel as another dimension of this project.

Although exciting investment decisions are being made for downtown revitalization that will affect the Indianapolis economy for many years, the short-term view is for a bowl-shaped recession due to uncertainties surrounding the strength of recovery of the automobile and residential construction industries.

FORT WAYNE

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Any update of the 1980 forecast must include an assessment of the impact—past and future—of the International Harvester strike locally. The strike, involving approximately 8,000 employees, had just started at the time of preparation of the forecast that appeared in the November-December issue of the *IBR*. The strike, longest in the history of the UAW, ultimately lasted almost six months; the local plant resumed operations the fourth week in April.

Utilizing data from a strike against General Electric in 1970, I projected at the start of the IH strike that the area economy—the four county SMSA—would suffer a 12 percent—\$2.5 million—loss per month in major department

and discount store sales and a \$12.5 million loss in total retail sales. Ex post analysis of actual sales data suggests a \$2.1 million loss per month in major department and discount stores and a \$16 million loss per month in total retail sales. Given that the two methodologies produced similar results, it can be said with relative confidence that the IH strike cost the local economy approximately \$115 million in lost retail sales. This is equivalent to a yearly loss of approximately 8 percent, or the total retail sales of one month for the area economy.

The return of International Harvester to production will mitigate the \$16 million monthly loss and will introduce a welcome counter-cyclical force into the economy, especially since IH is typically a strong pro-cyclical force. The relevant question now is whether IH's inventory position is sufficiently depleted and/or the current recession will be sufficiently short-lived that IH will not have to reduce employment through the recessionary period. The question has already been answered for Scout production; IH has announced that the production rate is being halved.

The spirit of my original forecast appears still to be intact, although the forecast of the local economy to "...bottom out in the third quarter" needs to be pushed back *at least* one quarter. The problem is that the original forecast of stimulative monetary and fiscal policy being applied in sufficient time "to cause the national economy to register positive growth in the third quarter" has not occurred. The policies in place or in vogue now—decreasing monetary growth and balancing the 1981 Federal budget—still must go through a complete reversal. (The 1980 Federal budget deficit has just been increased—expenditures loaded into 1980—so that Congress at least can discuss, without total hypocrisy, balancing the 1981 budget. However, whatever resolve Congress had will wither in the heat of the onrushing recession and upcoming election.)

A peak-to-trough drop in seasonally adjusted payroll employment of 5,000-7,000 was

originally forecast for the Fort Wayne SMSA. Payroll employment peaked in August, 1979 at 186,700 and has declined by 5,000 as of March, 1980. (Persons on strike are counted as employed.) Assuming the employment data is not revised substantially at year-end (which has not been a good assumption the last few years), it appears that payroll employment will decline by *at least* 7,000 (or 3.7 percent) before the trend is reversed. The seasonally adjusted unemployment rate in March was 8.7 percent as compared with 6.2 percent nationally. (In April the national unemployment rate jumped to 7.0 percent; the local unemployment rate for April is not available.)

A severely depressed local (new) housing situation was chronicled in the original forecast; however it was noted that "(this) summer . . . activity should begin to pick up." The depression continues. New single-family and duplex (counted as two) building permits totaled 148 through April as compared with 374 for the same period last year. In fact 149 permits were issued in April, 1979 alone. The data suggest that indeed the housing sector has no way to go but up; unfortunately, local economic conditions will leave the sector severely depressed throughout the remainder of 1980.

In summary, the original forecast noted that "... there is no reason for optimism for the Fort Wayne economy in 1980" and "because of its relatively high employment in durable goods manufacturing, the Fort Wayne area will bear a disproportionate share of (the) 'drying-out' (process)." That forecast still stands.

MUNCIE-ANDERSON

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This mid-year reassessment of the 1980 outlook comes at a time when the nation's economy, in the parlance of skydivers, is in a virtual state of free-fall. The elusive and much-prophesied recession has finally arrived in characteristically swift and sharp fashion. The economy's slide appears to have commenced in February and rapidly accelerated during March and April. The preliminary 1.1 percent real growth of GNP attributed to the first quarter masks the rapid deterioration that took place in March. The basic causes of the decline can be associated largely with the weakened financial position of the household—to wit, declining real disposable personal income (DPI)—7.9 percent between March 1979 and March 1980; declining employment, with unemployment skyrocketing from 6.2 to 7 percent between March and April; declining value of nearly all household assets, including homes; and record high debt burdens.

The economic performance of the Anderson, New Castle and Muncie area is highly intertwined and is ultrasensitive to changes in the national economy. When the nation's economy sneezes, this region gets pneumonia. Thus, the 1973-75 recession was far less severe in the Pacific Mountain and Southwest regions than in the industrial Great Lakes area, where its impact was disproportionately heavy. As the 1980 downturn is currently concentrated primarily in the automobile, construction and steel industries, Anderson, New Castle and Muncie, with their emphasis on durable goods production, can expect to bear the brunt of the storm.

The U.S. auto industry is in the throes of its deepest crisis since the Great Depression: thirty-three percent of the UAW workers are on layoff. With Chrysler Corporation teetering precariously close to bankruptcy, and Ford and General Motors harassed by severe financial strain, inflation-plagued American consumers have not only retrenched their spending, but have exhibited a growing preference for fuel-efficient foreign cars. For the first quarter of 1980, domestic car sales were off fifteen

percent from the previous year, but April sales plummeted a precipitous thirty-one percent. The primary and secondary effects of this decline are now impacting on the Anderson, New Castle and Muncie area.

In the *IBR* outlook for 1980, I reported 1,400 workers laid off at Anderson's Delco Remy and Guide plants as of early November and predicted significant additional layoffs before Christmas, accompanied by a continued slump in auto sales with high unemployment persisting through 1980. My forecast was correct, but I failed to perceive the magnitude of the debacle. By January, Anderson's Delco Remy and Guide complex had over 4,000 hourly workers on indefinite layoff. By February, Anderson's unemployment was a record 17.5 percent—highest in the United States for a city of its size. By May 4, employment in each affiliate was down roughly 30 percent and the combined layoffs totaled close to 6,000 workers—a greater number than were furloughed in the 1973-75 recession. As these two industrial heavyweights accounted for roughly 38 percent of the Anderson SMSA employed labor force in early 1979, the economic impact on this east central Indiana area is severe by most standards, but it is certainly mitigated by General Motors Supplementary Unemployment Benefits. SUB, equal to 95 percent of the worker's take-home pay, are available to all but those with very limited seniority. Nevertheless, the uncertainty created by the situation has had ripple effects throughout the area as evidenced by employment declines in construction and retail trade. Large ticket items are not moving well as rumors abound as to when SUB will run out or as to the number of workers who will not be recalled.

Rank-and-file workers are concerned, with reason, that GM may be reducing the scale of their operations in the Anderson area permanently. The firm has recently sold land holdings in the Anderson area and has built four new plants in the South (see *IBR* Nov-Dec, 1979). GM recently announced the decision to build

two new plants in Missouri and southeastern Michigan but made no mention of the Anderson complex in these expansion plans. I would not be surprised if approximately 1,500 workers were permanently detached from the Delco plants, though the Guide complex should fare considerably better. Conditions in the Anderson economy will deteriorate further before they get better, but surely the number of workers laid off from these General Motors plants will be much smaller in the months ahead.

New Castle's economy, like Anderson's, is tied heavily to durable goods production, and particularly the motor vehicle industry, with such firms as Chrysler, Perfect Circle and the Dana Corporation. The Chrysler Corporation initiated heavy layoffs much earlier than General Motors, so New Castle has had high unemployment for several months. Unemployment currently measures close to 15 percent in New Castle.

Large numbers of workers in Muncie, New Castle and Anderson live in one of the cities and commute to work in another, so a downturn in, say, Anderson impacts quickly on both New Castle and Muncie. Indeed, seniority provisions in the UAW contract with General Motors provide for shifting workers between the Anderson and Muncie plants.

Muncie's economy is much more diversified than Anderson's. Durable goods production accounts for only 36 percent of Muncie's personal income as opposed to 60 percent for Anderson. Thus, given current economic exigencies, it is not surprising that Muncie's employment and unemployment figures read significantly better than Anderson's. Muncie's seasonally adjusted employed labor force in March 1980 stood at 50,700, representing a 5.4 percent decrease from March 1979. From September 1979 to March 1980, Muncie's labor force declined almost 2 percent. Seasonally adjusted unemployment measured 9.7 percent in March, but that figure should be treated with a jaundiced eye as the picture is muddled by a

23-day strike at Warner Gear, which was not settled until the end of March. However, recent layoffs at Chevrolet Muncie and Warner Gear will keep unemployment near 10 percent when April figures become available. The order spindles of the many small machine tool shops centered in Muncie are not yet rusting from nonuse, but these firms are not hiring, and some have had to make adjustments in their operations due to the International Harvester Strike in Ft. Wayne.

Merchants who vociferously boasted in early March, "If this is a recession may it last forever," are now speaking in more subdued tones. Housing is on the skids—February completions ran 51 percent below the comparable 1979 month. Twenty-three percent fewer deeds were recorded during the first quarter of 1980 than during the comparable quarter of 1979. Deed recordings are running slower than at any time since the early 1960s. In the past, speculation in homes by buyers and builders was rewarding and was promoted as a sure way to achieve price appreciation from an asset, that is, as a sure hedge against inflation. Such speculation currently is being questioned in the market place as expected capital gains become increasingly difficult to realize. Those few homes that are currently being sold are being exchanged on contract at interest rates close to last year's rates.

Muncie, like Anderson, will experience deteriorating economic conditions through much of 1980, and a modest turnaround is not likely until 1981.

RICHMOND

ASHTON VERAMALLAY
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Indiana University East



The Richmond area economy is now feeling the effects of the national economic slowdown.

Industrial plant layoffs continue unabated, bringing the unemployment rate to 12.7 percent. Most of the layoffs have occurred in electrical machinery and transportation equipment with small losses in food and kindred products, nonelectrical machinery and primary metals industries.

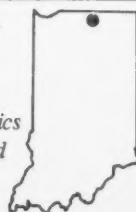
Fifty-three percent of all area incomes come from manufacturing employment, and the local economy is very sensitive to the prevailing conditions of high interest rates and high prices for energy. The building trades and automotive and recreational outlets, for example, are virtually stagnant in the present economic environment. The farm sector, which is beset by high costs of operation and falling crop prices, may expect a 12.5 percent reduction in real income.

In 1978, personal per capita income for the Richmond area was \$7,147; although it is now probably over \$7,800, the nominal increase has not kept pace with the ravaging effects of inflation.

Despite the present economic slowdown, I expect the Richmond economy to be on the upswing by early next year provided that corrective policy prescriptions are applied at the national level.

SOUTH BEND—ELKHART

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In recent Outlook issues of *Indiana Business Review*, I suggested that the South Bend and Elkhart area economies could expect to experience recessionary conditions whether or not a much publicized downturn materialized in the national economy. There seems little doubt that the two communities are presently in the midst of a recession that began last spring in Elkhart and during the third quarter of 1979 in South Bend.

South Bend. Nineteen seventy-nine got off to a vigorous start in South Bend. Unemployment was low, sales of industrial and commercial energy were high, and the automobile and housing markets were active. As a result, several of the indicators were averaged for 1979 at levels exceeding those of 1978 (and 1978 was one of the better years of the 1970s with respect to economic performance). As 1979 progressed, however, softness that reflected national economic conditions—particularly in autos and housing—began to appear. Table 1

shows that by February 1980 nearly all indicators had declined. Some, like industrial natural gas sales, the unemployment rate, car and truck sales, and new housing permits issued, had deteriorated substantially. Only the nonmanufacturing sector of the labor force was holding its own at levels above those recorded in early 1979. The unemployment rate of 7.9 percent was nearly two percentage points above the national average and represented more than twelve thousand workers idled in the South Bend SMSA.

TABLE 1

SELECTED INDICATORS FOR SOUTH BEND (Seasonally adjusted: 1967 = 100)

Indicator	Average 1978	Average 1979	Feb. 1979	Feb. 1980	Percent change Feb. 1979 - Feb. 1980
Industrial electricity sales ¹	106.9	125.6	138.7	137.1	- 1.1
Natural gas sales ²					
Commercial	140.1	143.4	155.9	144.1	- 7.6
Industrial	88.9	98.4	107.0	88.9	-16.9
Employment data ²					
Nonagricultural	113.5	119.3	120.5	123.9	2.8
Manufacturing	91.9	94.2	94.9	92.1	- 2.9
Nonmanufacturing	127.0	134.7	135.9	143.1	5.3
Unemployment rate ² (% of work force)	5.8	6.1	4.6	7.9	--
Help wanted index	166.4	135.5	177.1	91.6	-48.3
New passenger car sales ²	135.7	120.0	127.0	105.1	-17.2
New truck sales ²	335.8	241.9	281.0	163.9	-41.7
Construction data ³					
Estimated value of new housing permits	407.3	297.6	275.2	275.2	-0-
Number of new housing permits issued	160.0	111.0	122.0	97.6	-20.0
Average value per new housing permit	265.0	287.7	246.3	307.8	25.0

¹ South Bend

² South Bend SMSA (St. Joseph and Marshall Counties)

³ St. Joseph County excluding the cities of South Bend and Mishawaka

SOURCE: Bureau of Business and Economic Research, Indiana University at South Bend.

TABLE 2

SELECTED INDICATORS FOR THE ELKHART AREA (Seasonally adjusted: 1967 = 100)

<i>Indicator</i>	<i>Average 1978</i>	<i>Average 1979</i>	<i>Feb. 1979</i>	<i>Feb. 1980</i>	<i>Percent change Feb. 1979 - Feb. 1980</i>
Industrial electricity sales ¹	150.4	162.4	183.5	182.0	- 1.0
Natural gas sales ¹					
Commercial	161.2	165.6	195.6	168.8	-13.7
Industrial	236.7	262.8	296.7	240.1	-19.1
Employment data ²					
Nonagricultural	177.2	173.8	185.8	176.6	- 5.0
Manufacturing	141.1	134.8	147.7	135.2	- 8.5
Nonmanufacturing	260.0	263.4	273.3	271.8	- 1.0
Unemployment rate ² (% of work force)	4.9	7.8	4.2	9.2	--
Construction data ^{3*}					
Estimated value of new housing permits	303.9	250.8	204.8	139.2	-32.0
Number of new housing permits issued	198.3	119.8	78.7	51.2	-34.9
Average value per new housing permit	179.6	220.4	190.3	199.0	4.6

¹ City of Elkhart² Elkhart County³ Elkhart County excluding the cities of Elkhart and Goshen

*All construction data has base year 1970 = 100

SOURCE: Bureau of Business and Economic Research, Indiana University at South Bend.

Elkhart. Conditions were worse in Elkhart's economy than in South Bend's primarily because of depressed conditions in the community's recreational vehicle industry. Like South Bend, Elkhart began 1979 on a positive note. Most indicators were up and the unemployment rate reached a low of 4.2 percent in February. By February 1980, however, the unemployment rate more than doubled. Six thousand two hundred persons joined the unemployment ranks in that period. Forty-five percent of those had been employed in the recreational vehicle industry.

It is interesting to note, however, that another industry that is concentrated in the Elkhart area—the mobile home industry—held its own throughout most of 1979. Production and shipments were off minimally at year's end, likely reflecting credit limitations at both consumer and dealer levels. In these days of

escalating construction costs, manufactured housing gains in competitive advantage with respect to conventional housing.

Outlook. There is no good reason to forecast near-term improving conditions for the economies of South Bend and Elkhart. As a matter of fact, the fairly close ties of both communities to durable goods manufacturing (Elkhart to a larger degree than South Bend), and a significant portion of this activity in the transportation equipment sector, make it likely that the downturn will be more severe locally than for the economy as a whole.

Several longer-term factors will help buoy the South Bend economy. These include: passage of a state incremental taxing bill vital to the construction of the \$35 million Century Mall project; plans to locate a \$100 million ethanol plant in South Bend; location in Mishawaka of

a Miles Laboratories plant that will employ several hundred workers; and plans to open a second Indiana Toll Road interchange in the area. Likewise, developments in Elkhart that can be seen as very positive include a \$30 million Miles expansion in Elkhart and the opening of a NIBCO valve plant in Middlebury that could ultimately employ 500 persons.

In the short run, however, the continued softening of the two economies should result in unemployment rates that exceed 9 percent in South Bend and 12 percent in Elkhart by year's end with attendant reductions in autos, housing, and retail sales. The depth of the recession, particularly in South Bend, will depend on the severity of the national downturn.

KOKOMO-MARION

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A significant downturn in the auto industry, caused by declining auto sales, rising interest rates, and declining production, is having a severe effect on the economies of Kokomo (Howard County) and Marion (Grant County) in particular, and other neighboring counties in general. Currently 6,412 workers in the auto-related industries, or 36 percent of the auto-related work force in Kokomo and Marion, are on indefinite layoffs. Table 1 shows the breakdown.

In addition to woes caused by the slump in the auto industry, the parent company of Penn-Dixie Steel Corporation, Kokomo's third-largest employer, recently filed for bankruptcy, an event that has had chilling effects on the community. Currently 8.5 percent of Penn-Dixie's 1,300 workers are on indefinite layoffs. If the Penn-Dixie plant is closed indefinitely, it

TABLE 1

<i>Manufacturer</i>	<i>Indefinite layoffs</i>	<i>Percentage of normal work force</i>
Kokomo		
Chrysler Corporation	3,000	52
Delco Electronics	1,650	19
Marion		
Dana Corporation	588	53
Fisher Body	959	31
General Tire and Rubber Company	215	37

could have a devastating effect on Kokomo's economy.

Kokomo's problems do not stop at Chrysler and Penn-Dixie. In May, American Standard Inc., a producer of vitreous china plumbing fixtures since 1893, permanently closed its plant in Kokomo, causing 175 people to lose their jobs. In March, Brada Miller Freight Systems, Inc. moved its Kokomo operation to Alabama, causing 35 persons to lose their jobs. Kokomo's commuter airline service, discontinued in March 1979, has not yet resumed its operation. No one knows when, or if at all, it will resume.

High Unemployment Caused by Massive Auto Layoffs:

Massive auto layoffs and overall slowdown in the North Central region's economy have caused unemployment rates to increase substantially. Table 2, which gives unemployment rates in different counties of the North Central region, shows that, except for Carroll County, unemployment rates in the North Central region far exceed state and national rates. Howard County, which has the highest unemployment rate in the region, is one of the ten worst-affected counties in Indiana.

TABLE 2

Percentage of Unemployed:
March 1980
(Preliminary Data)

<i>Location</i>	<i>Percent</i>
U.S.	6.6
Indiana	9.2
Howard County	14.2
Grant County	11.9
Miami County	10.9
Tipton County	10.9
Clinton County	10.1
Carroll County	6.5

SOURCE: Indiana Employment Security Division, Indianapolis.

A Downturn in Housing Sector:

A downturn in the auto industry is having ripple effects on housing and retail sectors of the economy. High mortgage interest rates and a reduction in take-home wages due to layoffs and loss of overtime work are either causing some families to postpone their house purchasing plans or are making them ineligible for bank loans. Despite the drop in mortgage interest rates in recent weeks, from 17.5 percent to 12.75 percent on an 80 percent mortgage loan

amount, the number of loan applications at banks in Kokomo has not increased dramatically. The comparative data in Table 3, provided by one of Kokomo's saving and loan associations, spell out the effects of the economic slowdown on demand for mortgage loans.

A significant drop in the number of conventional loans might have been due to the combined effects of higher mortgage interest rates, layoffs, increased number of contract sales, and the uncertain future. An increase in the dollar amount of home improvement loans suggests that many families are postponing purchases of houses by improving present houses.

Another set of statistics provided by Kokomo's Realtors' Association suggests that Kokomo's housing market is going through noticeable changes. Table 4 compares residential housing market data for the Kokomo area in the January-March months of 1979 and 1980. The data imply three things: (1) a 20 percent decline in the number of houses sold during January 20 - March 20, 1980, compared with the comparable period in 1979; (2) a 28 percent increase in the average number of days required to sell a house from a year ago (it now takes an average of four months to sell a house in Kokomo); and (3) a reduction in the ratio of sale price to list price, indicating cutbacks in sale prices. This may also mean that housing prices are not rising rapidly.

TABLE 3

Mortgage Loan Demand

	<i>1979 Jan.-Mar.</i>	<i>1980 Jan.-Mar.</i>	<i>Percent change</i>
Conventional loans approved			
Number	74	44	-41
Dollar amount (millions)	2.6	1.6	-42
Home improvement loans approved			
Number	17	11	-35
Dollar amount (thousands)	117,598	221,979	+89

TABLE 4

Residential Housing—Kokomo

	1979*	1980†	Percent change
Houses sold— total number	167	139	-20
Sale price to list price percent	96	94	-
Days on market— average number	104	115	+28

*January 24-March 26, 1979

†January 20-March 20, 1980

Effects on Housing and Auto Related Businesses and Retail Sales:

A slump in the housing market is having severe effects on housing-related businesses in Kokomo. For example, a local abstract company's business has dropped 20 percent on account of a lull in the housing market. A high-ranking officer of Kokomo's Home Builders Association recently pointed out that Kokomo may experience a 50 percent drop in housing starts in 1980. Such a drop could jeopardize job security of a substantial proportion of the nearly 1,000 people involved in the housing-related businesses in Kokomo.

A downturn in the economy is having serious effects on the purchase of big ticket items, on the business activities of local freight companies, and on production schedules of suppliers of parts to local industries. For example, local industries that had sold \$8.4 million worth of parts to Chrysler Corporation in 1978 are facing difficult days due to lack of demand for their supplies.

Good Economic News:

Although bad news is receiving the most attention, some good things are also happening in the Kokomo-Marion area. Stellite Division of Cabot Corporation, the fourth largest employer

in Kokomo, has hired more workers in recent months to keep up with its rising production schedule. Similarly, RCA and Anaconda plants in Marion are maintaining a high production schedule.

Third Century Venture Corporation of Indianapolis announced its plans to build a \$10-million ethanol plant in Kokomo. The plant, to be completed sometime this year, will hire 35 to 40 persons. American Energy Systems Ltd. disclosed its intentions to open a grain alcohol plant in Logansport. Bearings Inc., a supplier of bearings to all major industries in Kokomo, made a 3,000 foot addition to its existing branch. Indiana Bell Telephone has plans to spend \$2.1 million in expanding and modernizing its system in Howard County in 1980. Ambassador Steel Corporation recently bought the 24-acre complex of the defunct World Color Press in Kokomo.

Gloomy Near-Term Outlook:

Looking through summer and fall 1980, the following economic picture emerges:

Kokomo's recession, which started in the fourth quarter of 1979, could be worse if the auto industry continues to do poorly in the next two to four months. Marion's economy, which also hinges on the auto industry, will be hit hard by a further downturn in the auto industry.

While Chrysler may be the seventeenth-largest manufacturer or the third-largest auto manufacturer in the nation, it still is the second-largest employer in Kokomo. If Chrysler's economic prospects worsen the effects could ravage Kokomo's economy. An added shock would hit Kokomo if Penn-Dixie Steel Corporation is closed indefinitely under the pending reorganization plans. Present difficult conditions will also get worse once the laid-off workers run out of TRA benefits, SUB payments, and other unemployment benefits.

Present high unemployment rates in the North Central counties are likely to go up 2 or 3 percentage points above the preliminary March 1980 figures. In Kokomo and Marion, the rates could rise as high as 20 percent and 16 percent, respectively.

Despite these gloomy near-term predictions this region's economic activity will pick up some steam in the third quarter of 1980. Nonetheless, the economic recovery will be slow and prolonged.

JEFFERSONVILLE NEW ALBANY (Louisville Area)

FAY E. GRECKEL

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After a sluggish performance in the last half of 1979, the Louisville area economy finally began to show signs of a definite downturn in the first quarter of 1980.

The indexes of local business activity compiled by the Louisville Area Chamber of Commerce (Table 1) summarize the situation. Ex-

cept for the financial area, every index declined between the final quarter of 1979 and the first quarter of 1980.

Here, as in many other localities, the collapsing housing market played a major role in the economic downturn. Although most sectors represented in Table 1 fell off slightly, the construction index plummeted from an average of 156.0 in the fourth quarter of 1979 to 129.3 in the first quarter of 1980. In February and March, real estate sales were about one-third lower than the previous year. Residential construction had already slowed in 1979, with permits running about 35 percent below the 1978 levels in Floyd and Clark Counties. As rapidly rising interest rates in early 1980 choked off access to borrowed funds, speculative building halted and other residential construction declined sharply.

By March 1980, mortgage rates in the metropolitan area had risen to a range of 15 percent to 16 percent, compared with 10 percent to 11 percent one year earlier. Mortgage rates rose again in April, further dampening home buying and home building. However, with the prime interest rate beginning to ease nationwide this spring, mortgage rates will follow, and this should allow the housing market to revive somewhat.

TABLE 1

INDEX OF LOUISVILLE AREA BUSINESS ACTIVITY, MARCH 1970-MARCH 1980

	March 1970	March 1979	Dec. 1979	March 1980	Quarterly Averages			Change in Index QIV 1979 to QI 1980
					QI 1979	QIV 1979	QI 1980	
Industrial production	116.0	123.8	108.5	114.2	125.5	116.1	114.6	- 1.5
Transportation	136.4	185.9	190.4	183.6	182.0	189.3	183.6	- 5.7
Trade and services	108.3	154.9	150.8	143.9	151.4	150.2	148.3	- 1.9
Construction	117.8	144.0	161.5	118.5	152.4	156.0	129.3	-26.7
Financial	135.8	343.8	377.6	428.6	346.6	373.2	408.1	+34.9
Employment	111.4	137.4	139.1	134.5	137.5	138.4	133.8	- 4.6
Composite Index	117.5	162.8	161.4	163.3	162.9	163.0	162.9	- 0.1

1967 = 100 (seasonally adjusted)

SOURCE: Research Department, Louisville Area Chamber of Commerce

Nonresidential construction should remain moderately strong this year, particularly on projects benefitting from government funding. School construction continues in Floyd and Clark Counties. In Louisville, various development projects are underway in and around the central business district, including the \$135-million Galleria—a many-faceted commercial complex, the \$26-million Kentucky Center for the Arts, a new medical-care facility, and some small-scale “adaptive reuse” transformations of handsome nineteenth-century buildings along Main Street. Work is also proceeding on the Jefferson Trade Center and the Westport Distribution Center, an industrial park and distribution complex with a planned capacity of 1.7 million square feet, in southeastern Jefferson County.

Neither lower interest rates nor nonresidential construction projects will do much to buoy the construction sector, however, if there are no workers on the job. Strikes by union carpenters and masons halted construction on many projects at the beginning of May. As of this writing, there is no indication how long these strikes will last.

Manufacturing is the area's second weak sector, but thus far the problems are confined mostly to a few large producers. The poor housing market is reflected in lower production at General Electric, the area's largest employer, and in reduced employment in the wood-working industry; Clark and Floyd Counties employed about 300 fewer woodworkers than a year ago. Despite severe auto production cutbacks elsewhere in the state, the local Ford plants have managed to get along with only temporary layoffs—although these are becoming increasingly frequent. GE has also taken the temporary furlough approach but is expected to lay off 3,700 workers for an indefinite period beginning in June. These cutbacks are already having ripple effects, such as reduced business for local transport firms and more cautious consumer buying. As the recession broadens and deepens nationally, other

manufacturers will feel the impact, and additional layoffs are virtually inevitable.

Offsetting some of these declines, the six-month strike at International Harvester finally ended, and the second quarter statistics will reflect the resulting gain in employment, production, and incomes. Many local industries remain strong. To take one example among the major employers, Jeffboat, a Jeffersonville firm, built a record 445 barges in 1979, and production at their huge facility should continue at a high level throughout this year.

Metropolitan-area employment increased by fewer than 2,000 jobs between December 1978 and December 1979, about 12 percent of the typical yearly gain. During the first quarter of 1980, employment fell below the year-earlier level, although adding back in the striking International Harvester employees would have more than offset this apparent decline. Even so, all signs point to a real decline in employment during 1980.

In a notable departure from the usual trend, employment remains stronger in Clark and Floyd County firms than in the Kentucky portion of the metropolitan area. During the twelve months ending December 1979, the two Indiana counties added more than 2,500 jobs, some of which were temporary Census Bureau positions. Although the twelve-month differential narrowed in the first quarter, employment in March 1980 was still 1,600 workers above the year-earlier level.

Unemployment has been rising throughout the metropolitan area. In March the area-wide unemployment rate was 5.9 percent, up from 5.3 percent a year earlier. As usual, the unemployment rate is higher for residents of Clark and Floyd Counties (see Table 2).

As we have moved not only into a new phase of the business cycle, but also into a new decade, it seems appropriate to compare today's economy with that of ten years ago. To that end, Tables 1 and 2 contain data for March 1970. Employment in the Louisville metropolitan area increased about 20 percent over the

TABLE 2

Employment and Unemployment in the Louisville-Jeffersonville-New Albany Area, March 1970-March 1980*

	<i>March 1970</i>	<i>March 1979</i>	<i>Dec. 1979</i>	<i>March 1980</i>
Clark and Floyd Counties				
Total nonfarm employment	46,200	46,100	48,500	47,700
Manufacturing	24,600	12,500	12,000	11,900
Nonmanufacturing	21,600	33,600	36,500	35,800
Residents unemployed	2,200	4,200	4,100	4,700
Unemployment rate	3.9%	6.4%	6.0%	7.0%
Louisville Metropolitan Area†				
Total nonfarm employment	333,500	396,700	403,800	395,400
Manufacturing	123,200	109,200	105,700	104,400
Nonmanufacturing	210,400	287,500	298,100	290,900
Residents unemployed	12,500	21,600	23,600	24,900
Unemployment rate	3.5%	5.3%	5.5%	5.9%

*The employment data refer to establishments located within the area cited; the unemployment data refer to residents of the area cited. None of the data are seasonally adjusted.

†Includes Floyd and Clark Counties in Indiana, and Jefferson, Oldham, and Bullitt Counties in Kentucky.

SOURCES: Indiana Employment Security Division; Kentucky Department for Human Resources.

decade, but the increase in Clark and Floyd Counties was less than 5 percent. The two Indiana counties have had a more dynamic decade than the latter statistic suggests. Ten years ago there were some 15,000 people employed at the munitions plant in Charlestown; within the next two or three years those jobs disappeared and were gradually replaced by more permanent employment opportunities in other sectors, especially in nonmanufacturing. There is one 1970 statistic that we have no chance of matching today: the local unemployment rate ten years ago was a mere 3.5 percent.

The growth in economic activity over the decade is perhaps best recorded by the 50-percentage-point rise in the transportation index, which measures the volume of goods moving into and out of the area. And we can see the roots of our present inflation in the financial index's 300-point increase. Deposits and loans at large commercial banks underlie that index, and its soaring path reflects the expansion of money and credit that has fueled our relentless inflation.

Turning from a look backward to a glance at the future, we have a recession to endure in the months ahead. That means employment will continue to contract and unemployment to rise, probably reaching a local rate of well over 7 percent, seasonally adjusted, later this year. Consumer purchases, which long held recession at bay, will decline, adding to the difficulties facing the automobile and consumer durables industries. Offsetting some of these difficulties, falling interest rates will bolster to some extent the housing market and its related industries. Barring any major federal shifts to expansionary fiscal or monetary policy, the economy is likely to remain in a slump through the remainder of 1980. The depth of the recession is very hard to foresee just now. My present guess is that there will be a considerable dampening of economic activity in the Louisville area, but much of the decline will be concentrated in a few sectors; overall, the local impact will be less severe than the nationwide average.

**GARY—HAMMOND
EAST CHICAGO
(Calumet Area)**

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Our 1979 November-December report noted a slight decline in regional manufacturing; auto body fabricating, cold-rolled steel, etc. Based on a well-established cyclical profile this normally heralds an economic downturn in five to six months. That downturn is now upon us, as indicated by the following statistics: The Regional Index of Industrial Activity, which had an average value of 100 in 1976, and which peaked at 110.7 in September 1979, gradually declined in each successive month to reach a value of 100.7 in April 1980. The region lost about 4,200 manufacturing jobs and over 2.3 work hours per week, putting current average weekly hours below 39 for the first time since the last downturn. Manufacturing weekly earnings, in real terms, fell 12.1 percent (6.17 percent in steel) from their levels of a year ago. Metropolitan raw steel tonnage shipped fell, from the peak in March 1979, by over 22 percent by the end of the first quarter of 1980.

The troublesome questions are, of course, the severity, duration and local impact of the slowdown in economic growth. Here we have to take a look at the total picture with all its ramifications. One hears that serious downturns seldom occur in presidential election years. That may be so, yet a few danger signals remain. We applied exponentially-smoothed curves to regional data (some derived from national figures by a weighting formula) with the following results:

Table 1 gives exponentially smoothed growth rates for a number of categories, indicating a significant long-term upward thrust in unemployment, interest rates, prices, etc. These rates can be thought of as underlying rates, which would have existed even in the absence of Vietnam shocks, oil shocks and other nonrecurring disturbances. Although the figures reveal a fundamentally stable regional economy, with a small secular gain in real incomes (computed from wages, not including interest, proprietors and other non-wage incomes) the relatively small net real growth, coupled with a secular rise in the underlying minimal unemployment rate, also indicates some fragility. There is a possibility that the long cycle, sometimes referred to as the Kondratieff (named after a Russian economist), may be gradually inching down thus bringing about a long shallow recession that may linger on in our region for several months, or possibly even years. Minor interruptions in the long downturn may occur towards the end of the

TABLE 1

EXPONENTIALLY WEIGHTED LONG RUN GROWTH RATES

	Local steel tonnage	Unemployment	Prices	Bank rates	Mortgage rates	Retail sales in current \$\$\$	Government expenditures as proportion of wage income	Work force	Wages
1960-1980, lq.	1.89%	2.47%	5.76%	5.09%	4.76%	8.42%	1.28%	1.99%	6.75%
	(.78)	(.51%)	(1.72%)	(.51%)	(.54%)	(.91%)	(.28%)	(.62%)	(.51%)

TABLE 2

SURVEY OF LOCAL FIRMS

	Manufacturing	Construction	Autos	Transportation	Retail	Utilities	Finance and Insurance
<i>Expectations for second half of 1980 and for 1981</i>							
Moderate or significant growth expected	49% (65%)	48% (34%)	65% (72%)	51% (32%)	54% (66%)	82% (75%)	63% (94%)
No growth or decline	51% (35%)	52% (66%)	35% (28%)	49% (68%)	46% (34%)	18% (25%)	37% (6%)
<i>Current Experience</i>							
Moderate or significant growth	32% (44%)	14% (86%)	28% (67%)	38% (30%)	71% (78%)	85% (65%)	82% (94%)
No growth or decline	68% (56%)	86% (14%)	72% (33%)	62% (70%)	29% (22%)	15% (35%)	18% (6%)

current year or the first quarter of 1981. Additional analyses, not reported here because of their technical nature, tend to confirm the possibility of a long shallow recession followed by a low-growth (or no-growth) recovery.

We must bear in mind that 56.23 percent of the SMSA's wage and salary income is produced in our local durable goods manufacturing plants as opposed to 40.72 percent in the State of Indiana and 20.17 percent in the U.S. Porter County is most dependent on manufacturing with 62.1 percent of its total wage and salaried income deriving from durable goods (53.55 percent for Lake County.) Retail trade provides 9.84 percent of total wage and salaried income, government 8.41 percent, etc. With such a heavy concentration in manufacturing there is less resiliency and greater sensitivity to rising energy costs.

Data for the second half of 1980 and the first half of 1981 from a survey of local firms by IUN business students indicate a more pessimistic outlook. (The figures in parentheses are from our 1979 survey.) The only rise in optimism over 1979 is in construction where a considerable pent-up demand exists and where

falling interest rates might bring about a reversal. See Table 2.

In conclusion, we want to note that consumers, who have disregarded downside signals for so long, may now begin to make adjustments that will in turn delay the general upturn, just as the long lag in consumer expenditures held back the downturn.

TERRE HAUTE

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The recession has reached Terre Haute, and its onset has been more rapid, and more severe, than had been anticipated. Still, in many respects, the local economy retains considerable resiliency.

The six-month period from September 1979 to March 1980 has brought a substantial, and disquieting, increase in the estimated unemployment in the Terre Haute SMSA. Seasonally adjusted, unemployment in the region rose from 6.2 percent to 7.6 percent; without the seasonal adjustment the spurt was dramatic, from 5.2 percent to 8.7 percent. Such rates were not reached until the very depths of the 1975 recession. The unemployment estimates, however, may be misleading. Employment levels have been stable over the past six months, and have risen from an average of 57,300 in 1975 to 60,700 in 1977, to 63,100 in 1978, and to 69,700 by December 1979. In an area with a rather stable population, jobs have increased by some 20 percent within a period of five years. In the past six months no plants have closed, and there has been only one layoff of any size—in February, at CBS records.

Real estate sales and construction exhibit similarly mixed patterns. Ongoing construction projects virtually guaranteed a high level of construction activity for at least the first six months of 1980, and on a year-to-year basis construction employment is up substantially from last year, about double the levels typical of the '70s. Some new construction projects have been announced including, a J. C. Penney Department Store for Honey Creek Square, a 120-apartment retirement village at Saint Mary-of-the-Woods College, and school construction in Sullivan County. However, after a very strong 1979, prospects appear dismal for builders of single-family homes. The resale home market also has changed dramatically, with mortgage rates recently in excess of 15½ percent. "Creativity"—mortgage assumptions, contracts, and the like—is now the password to home financing, but a seller who needs to extract full equity now faces serious problems. Although a Clay County realtor reported business off 75 percent, the record in Vigo County shows sales holding up surprisingly well. The first quarter of 1980 virtually equaled the

corresponding period a year ago. A March-to-March comparison, however, does show a drop off of about one-third.

Local merchants quite nicely survived the monetary restraints imposed by the Federal Reserve Board on October 13. The further tightening, and associated credit controls of the ides of March may well prove another matter. New car sales were reported up in January and February; a softening in March deepened in April. Furniture, major appliances, and home improvement items tracked similar patterns. Those who needed financing found it harder to obtain. At the same time a local savings institution reported an upturn in savings deposits, and a local securities dealer noted that large numbers of people who had never seen the inside of a brokerage office had been buying into money market funds. Caution as well as constraints contributed to the consumer pull-back.

Agriculture is one sector where the deterioration in outlook has been dramatic and unambiguous. Commodity prices fell with the Russian grain embargo, but costs—interest, fuel, fertilizer—continue to soar. Nationally farm income is expected to drop 25 percent; locally the situation may be worse. Farm income constitutes a small proportion of total income in the SMSA, but local merchants depend on a rather extensive rural trading area, and many local manufacturing activities are linked to agriculture.

To date the deterioration in economic activity within the Terre Haute area has been palpable, and pervasive, but modest. Expectations have deteriorated more seriously. People are worried. They fear that the dislocations and aberrations associated with historically high rates of inflation have created the potential for an economic downturn that could be severe and protracted. The resultant caution has contributed much to the slowdown already experienced.

EVANSVILLE

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The Evansville economy did not experience a recession in 1979; however, the overall performance in 1979 can be characterized by stagnation. In terms of the revised Evansville Area Business Index, the growth rate of 1979 only amounted to 0.94 percent. During the year, a strong first quarter was followed by a weak second quarter. There was appreciable growth

in the third quarter, but virtually no growth in the fourth quarter. See the accompanying table. The line graph shows the composite index for the area from 1975-1979.

Statistics for the first quarter of 1980 showed an increase in overall activity, but evidences of weakness became obvious in trade and services, finance and employment. By March the national economy as well as the regional economy entered a recession, the depth and length of which is still unknown. Consequently, for the whole year of 1980, the Evansville Area Business Index should show no growth, with a 2 percent decline for the region possible. In the second quarter of 1980 industrial production is expected to decline along with activities in trade and services, transportation, and finance. Employment will certainly

EVANSVILLE AREA BUSINESS INDEX (Revised: 1977 = 100)

	Industrial Production	Trade & Services	Construction	Transportation	Finance	Employment	Composite Index
Annual							
1975	84.00	84.98	67.01	88.12	88.40	88.24	83.75
1976	90.49	93.53	83.52	93.45	91.58	94.58	91.64
1977	99.90	100.06	99.46	99.93	99.93	100.00	99.93
1978	102.45	106.47	123.28	104.51	108.95	106.92	106.66
1979	106.30	107.28	114.41	104.85	109.05	108.59	107.66
Quarterly (1979)							
First	106.96	108.14	129.17	106.46	109.18	107.98	109.87
Second	104.84	106.33	110.52	103.23	107.56	107.13	106.48
Third	102.96	107.44	110.42	106.72	109.55	109.30	107.10
Fourth	105.70	107.15	107.52	102.98	109.90	108.59	107.20
Monthly (1980)							
January	111.68	107.59	101.43	102.81	106.42	108.03	108.12
February	113.33	105.43	109.26	103.26	107.08	106.21	108.53

Composite index



decline and the regional unemployment rate will rise from 1979's 5.4 percent to about 7 percent.

High mortgage rates had dampened housing construction by 60 percent from 1978 to the fourth quarter of 1979. The housing depression will prevail in 1980. Amid this gloomy picture, business construction activities will play an important sustaining role. Business construction has been active in 1978 and 1979 and probably will be so in 1980. Business construction permit value in 1979 was almost \$43 million, slightly lower than 1978's \$50 million. In February 1980 a huge \$9 million permit value was added,

the largest monthly value in the decade. The Eastland Mall is now being constructed. The \$15 million Citizens National Bank Building broke ground in March and will be followed by other buildings of the Riverview Commerce Center. Thus, business construction in 1980 will be almost as active as in 1979, and may surpass 1979.

The 1980 recession could be as bad as the 1974-75 recession in terms of length and severity. But its impact on the Evansville-area economy will be less severe because of strong business construction and the absence of automobile manufacturing here.



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In this issue ■ ■ ■

The political season is open. Candidates are spending their advertising dollars to merchandise themselves and the concepts they purport to represent. Political action committees are soliciting contributions for distribution to candidates with the "appropriate" views. Business leaders are encouraged to get into the fray so that their voices may be heard. Kathy Smith provides a sample of the Indiana business leader's political activity level. If the past actions of the business community are a guide, business men and women will not play a major direct role in Campaign '80.

Energy continues to be a topic of sustained interest. Larry Davis offers a review of the basic energy source data to remind us of the resources we use and how our use has burgeoned in the past decades.

One consequence of the rise in petroleum prices seems to have been a decline in the number of gasoline service stations. Paul Feldhake identifies the Indiana counties that saw the greatest changes as filling stations were converted to other uses.

MJM

Political Activity of Indiana Businessmen

KATHY B. SMITH

Assistant Professor, Memphis State University, Department of Political Science, Memphis, Tennessee.¹

John Locke advocated that a society separate its economic from its political affairs. Although the political system should establish a healthy environment for business operations, it decidedly should not determine the behavior of the economic sector. Today the relationship between business and government is at times a closer and, alternately, a more hostile one than Locke envisioned. While the true nature of this relationship is often symbiotic, business and government have each viewed the other as an adversary who will usurp power or freedom if not diligently monitored. In part, this attitude begat the political actions to limit corporate political activity.

By Indiana statute, federal law (18 U.S. Criminal Code 10 (1951)), and the Campaign Finance Act of 1974, the role of corporations in politics is severely limited. But individual citizens who are also businessmen can still operate relatively freely in the political world, especially at state and local levels.

As disenchantment with government has increased, there is a need to look more closely at the involvement of community leaders in the political sector. One potential group of these

leaders can be found among state business executives. This study focuses upon the political behavior of state economic leaders by attempting to answer the following three questions. First, are there significant differences between those businessmen who choose to become politically active and those who do not? Second, do the politically active businessmen represent all sectors of the business community? Third, *why* do businessmen choose to become politically involved or, conversely, *why* do they choose to be relatively inactive?

QUESTIONNAIRE

In order to answer those questions, a questionnaire was mailed to 500 Indiana businessmen who owned or managed companies that were listed in the *Indiana Industrial Directory*, a publication of the Indiana State Chamber of Commerce. One hundred seven fully-completed questionnaires were returned and gave representative results from various sizes of firms, statewide locations and both manufacturing and nonmanufacturing enterprises.²

¹Smith, Kathy B. Ph.D., Purdue University, December, 1977. *A State Economic Elite: The Political Activity of Indiana Businessmen*. Major Professor: Myron Q. Hale.

²Although this survey was conducted in 1975-76, the author believes that the results are still applicable, because social and political attitudes tend to change slowly.

The six-page questionnaire was primarily composed of closed-ended questions, but two open-ended questions provided an opportunity for respondents to discuss the issues in their own words. The questionnaire was designed with three sections: 1) attitudes toward the American political system, 2) level and type of political activity engaged in by the respondents at local, state and federal levels and, 3) personal demographic characteristics.

The questionnaire was accompanied by a cover letter explaining the intent of the study, an assurance of anonymity to increase the rate of return, and a return envelope, already addressed. Many of the respondents accepted an offer to receive a personal copy of the survey results.

Through the use of one-way analysis of variance, discriminant analysis, cross-tabulations, and content analysis the following results were obtained.

RESULTS

Demographic Characteristics

A first step in reporting the findings is to describe the demographic characteristics of the respondents. Such description will provide both a check against generalization to all businessmen and a cursory glimpse at the characteristics of owners and managers of some Indiana businesses.

Most of the respondents (97.2%) were males over 51 years of age who had attended college. Over a third had annual incomes over \$50,000 (since this was the highest category listed, the number of individuals with incomes far above this amount is unknown), and no one earned less than \$10,000. Almost half (44.9%) came from families where the father had also been a self-employed or upper managerial businessman.

Although respondents lived in communities of all sizes, almost all (95.3%) had lived in their

communities for more than three years (the longest time period given in the questionnaire). Most (80.4%) had been with their present firm more than ten years and had rarely moved from one city to another during their working careers. In short, these respondents exhibited a very low level of mobility both between businesses and between communities.

Most of the respondents were in a number of clubs (mean 3.7). Business/professional groups were the type most frequently mentioned, followed by fraternal/social and civic groups. No single club was predominant among the business groups mentioned. In the fraternal/social category the Elks Club was very popular, while Kiwanis was mentioned most frequently in the civic category.

The religious make-up of the respondents reflected that of the state. Most were Protestants (71%), followed by Catholics (20.6%) and Jews (1.9%). Well over half of the respondents described their church attendance as frequent.

Politically, most respondents were Republicans (59.8%), with independents (20.6%) being more common than Democrats (15%). On a scale of conservative-liberal leanings the most frequent answer was "somewhat conservative" followed by "center" and "very conservative." "Somewhat liberal" and especially "very liberal" were not very popular stances among this group of businessmen.

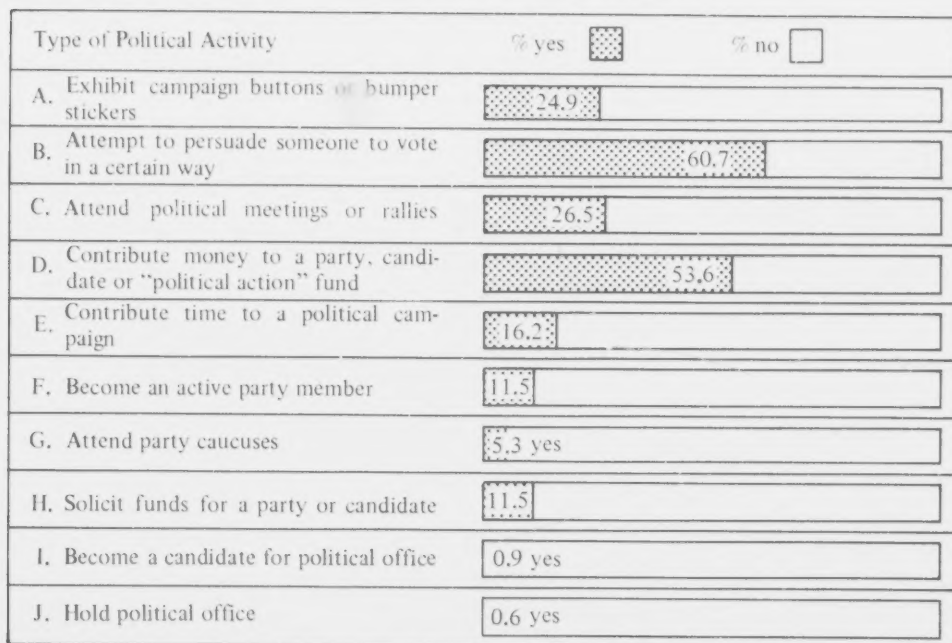
Types of Political Activity

The second section of findings deals with the types of political activity in which these businessmen engaged. When asked to check which political activities they had done in the previous five years, only two activities, "attempt to persuade someone to vote in a certain way" and "contribute money to a party, candidate or a business 'political action' fund" were checked by over fifty percent of the respondents (see Figure 1.)

Except at the highest level of political activity, the type of election (federal, state or

FIGURE 1

Average Level of Political Activity in Local, State and Federal Elections



(Numbers shown are percent responding yes.)

local) did not usually make any appreciable difference in the performance of any activity. Becoming a candidate and holding a political office were only done at the local level. Local elections were also more often the stimulus for attending political meetings or rallies than were state and federal elections.

TABLE 1

Interest in Politics

Level of interest	Frequency	Percentage
A great deal	22	(20.6%)
A fair amount	66	(61.7%)
Only a little	14	(13.1%)
No interest at all	5	(4.7%)

The question, "Generally speaking, how much interest would you say you have in politics?" most frequently received a moderately positive answer of "A fair amount." Similarly, when the two positive claims were compared with the two negative choices there was a marked predominance of responses on the side of having some interest in politics (see Table 1).

When asked how often they voted in local, state, and federal elections, the most popular response was "always." A remarkably high percentage of respondents answered that they always voted in local elections (87.9%), which, considering the low turnout of the general electorate in local elections, could help make businessmen politically influential in their home communities.

Although most respondents indicated that they were interested in politics and voted regularly, they did not spend much time on political affairs. Over sixty percent of the respondents said that they spent no time on politics each week. The lack of a desire or ability to give time to political matters is a recurring theme that also dominated responses to the open-ended questions.

Many of the businessmen in this study try to persuade people to vote a certain way and contribute money to political activities; sometimes get the desired results from their political action and vote regularly, but almost never spend time on political affairs. These businessmen are highly active politically when compared to the levels of political activity of the general electorate.³

Differences Among Respondents

A third set of findings deals with the differences among businessmen who rank as high, medium and low in level of political activity. There was a significant difference ($F=2.293$ with 106 degrees of freedom, F probability = .037) on the question of the future facing the respondent's family. The politically active businessmen were the most dissatisfied with the future. Those respondents who were the most satisfied were also the least politically involved.

There were also some significant differences in the personal characteristics between the participation groups. As expected those who were most interested in politics were signifi-

cantly more active politically than those respondents who were not interested in politics ($\chi^2=23.188$ with 9 degrees of freedom, significance = .005). Additionally, respondents who believed that their political activity produced the desired results (political efficacy) were significantly more likely to be politically active. This supports the theory that people who believe they can influence their government are much more likely to participate in politics. Political activity becomes, for them, a rational act.

Finally, party identification differed significantly between the participation groups ($\chi^2=27.763$ with 9 degrees of freedom, significance = .001). The two lowest political participation groups contained the largest proportion of members who were Democrats. Considering the Republican voting strength in many parts of the state, one explanation for this difference might be a reduced sense of political efficacy among the Democrats. If a Democrat believes that there is little chance of electing his party's choice, there may be a tendency to withdraw from political activity.

But as important as their significant differences are, there are variables which did not vary with the level of participation. For example, the data do not indicate that businessmen who are active in politics are older, wealthier, more conservative or connected to any certain size or type of business. Instead, the data suggest that although there are some significant differences, generally the politically active and inactive businessmen are both represented by a wide variety of personal traits. *No characterization of politically active or inactive businessmen can be drawn from this socioeconomic data with the possible exception of their differing political party preferences.*

Personal Views of Political Involvement

The fourth, and final group of findings dealt with the businessmen's personal views of political involvement as revealed through their

³Surveys of the general population have consistently concluded that most types of political participation are engaged in by only a small percentage of Americans. For example, in their book *Participation in America* (New York: Harper and Row, 1972) Sidney Verba and Norman Nye found from a sample of 3,095 people that only 28% had attempted to influence someone's vote choice (compared to my study's 60.7% in Figure 1) and only 13% of the general public had contributed money to a party or campaign (compared to my study's 53.6%), (Verba and Nye, p. 31.)

answers to open-ended questions. The first such question asked, "From your perspective as a businessman, what are some of the advantages and/or disadvantages of participation in political affairs?" Five advantages appeared most often among the responses. Heading the list was that through participation cherished values could be preserved. For example, one man wrote, "It's the only way to protect and preserve the free enterprise system and the traditional American values."

Becoming informed about public affairs was the second advantage seen in political participation. One businessman hoped "to learn spending patterns and what new projects are coming up in my community."

The third advantage was that participation provided an opportunity to influence decisions and government regulations.

Personal nonmaterial benefits (self-esteem, ego building and prestige) accounted for a fourth advantage. "Achieving personal satisfaction in one's accomplishments" was an example of this type of response.

The fifth consistently given advantage to participating was civic duty. For example, the response that "in a democracy such as ours participation is not only advantageous but necessary." All these advantages have in common their basically nonmaterial or ideological nature.

Moving to the disadvantages of political participation, we see a very different group of responses. Although four types of responses were given, the first two types were far more frequently discussed. The primary disadvantage listed was the time-consuming nature of political activity. The expressed need for time with their businesses and families precluded active involvement in politics.

The second most frequently cited disadvantage was that political participation would hurt business. One businessman expressed it this way, "Becoming too visible results in increased government attention and bureaucratic hassling."

The third disadvantage was that there was a lack of results produced by political activity. Frustration and the "small returns for the energy expended" were examples of this negative feeling toward political actions.

Finally, the fourth disadvantage was that to some businessmen the nature of politics made political participation unattractive. A company president said that "The general dishonesty of our political machinery" caused his lack of interest in political participation.

The first open-ended question dealt with the businessmen's general feelings toward political activity. The second focused on their personal reasons for being politically active or inactive. As we shall see, the respondents maintained a high degree of consistency between their general and specific answers.

The second question asked the respondent, "Please explain in your own words, why you do or do not participate in politics." Eighty-three percent of the responses were reasons for *not* participating while only twelve responses gave reasons *for* participating in politics. These responses were grouped into four categories.

First, the most frequent responses explained that the demands of business, particularly time demands, consumed all of a businessman's energy leaving none for political activity. Typical answers in this category included, "At the present time, I have devoted all my time to the business" and "I'm fully occupied with my business." A recurring assumption within this category was that it takes time to be politically effective. Since these respondents did not feel that they had the time to devote, they did not participate. Two examples of this approach were: "The individual involved casually or part-time in politics can accomplish very little. Therefore I have not participated," and "A small amount of work is no good at all." The need to be effective and to achieve results—both so necessary for success in business—proved to be obstacles in the path of political involvement.

The nature of politics and government was the second most frequent reason given for not participating in politics. A few of the more interesting responses included: "Too much a back-room operation with greater participation by attorneys who have never been successful in practice," or "If a person has any inclination to be corrupt, he will eventually get into politics," or "Politics and political activity in general is regressive and non-productive activity yielding no positive enrichment in life." The list of such comments about politics could continue, but obviously the point is that many businessmen are not politically active because they dislike politics and politicians.

Third, businessmen cited the negative effect their political activity could have on their businesses. Loss of customers and alienation of local political officials were two of these negative effects.

Fourth, for those few respondents who gave reasons for participating, duty was the most frequent explanation. According to one businessman, "It's a citizen's duty and responsibility to participate; the only way open to influence government directions and decisions."

In short, the majority of respondents gave reasons for *not* participating in politics. Furthermore, most of their reasons for abstaining were tied to socioeconomic characteristics. Those respondents listing reasons *for* participating, however, generally referred to ideological considerations such as democracy or civic duty.

CONCLUSIONS

The data did not reveal a different type of businessman who could be predicted to be politically active. Although there were some differences between low and high participators, there were many more similarities. Neither business size, type nor geographic location proved to be useful in predicting the political

involvement of the companies' top executives. Politically active businessmen do seem to be representative of the wide diversity found within the business community.

Second, on an individual level, it was apparent from the responses that many of the businessmen felt a conflict between what they were doing politically and what they felt they should have been doing. Most Americans experience this conflict between the socialized belief in the requirements of good citizenship and the realities of their political behavior. But for these businessmen there was an interesting twist: the conflict centered on the discrepancies between economic interests and ideological beliefs. Some felt that political activity was important for any good American citizen, but that it would seriously endanger their economic interests. Thus, while their beliefs pulled them toward active participation, the perceived threat to their economic interests repelled them.

Third, our data indicate that Indiana businessmen *are* more politically active than the general population, although they do not perceive themselves as active. This may represent the fact that they are leaders in their chosen economic fields who associate activity with effectiveness. Their conception of an "active" political role may be more demanding than that of the general population.

Fourth, to the responding businessmen, certain types of participation appear more desirable than other equally commonplace activities. Realizing the many costs inherent in participation, most respondents opted for those political activities that might minimize that cost through reduced visibility. Few respondents seemed willing to risk public exposure of their political activity through the exhibition of campaign buttons, bumper stickers, yard signs or attendance at political meetings. Since most of the businessmen studied perceived the economic consequences of political participa-

tion to outweigh the benefits, it would be rational for them to maintain a low level of intensity.

Sixth, regardless of their current impact on state governmental decisions (many respondents believe there was little impact), Indiana's

businessmen remain an untapped potential. Their intensity when aroused and combined with their resources (both personal and organizational) and available skills, would cause their impact on public policy to be much greater than it is today.

Changing Sources of U.S. Energy Consumption

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Energy consumption is associated with many, if not most, of the major problems facing America today. This article offers an introductory overview of the sources of energy currently available to the United States and of the changing composition of total energy consumption from the end of World War II to the present. The materials presented below deal with physical units measured in the common denominator of energy—BTUs (British Thermal Units). Prices and countries of origin are not considered.

The five major sources of energy consumption are petroleum, natural gas, coal, hydropower and geothermal, and nuclear power. Petroleum, which supplied about half of all final consumption in 1978, ranks first among these sources. Natural gas ranks second, followed by coal, hydropower and geothermal, and nuclear power in that order.

AGGREGATE TRENDS

Figure 1 shows that during the last three decades total gross energy consumption in this country has more than doubled. Consumption increased from 33,994 trillion BTUs in 1947 to 78,014 trillion BTUs in 1978.

FIGURE 1
Total U.S. Energy Consumption
by Primary Energy Type, 1948-1978*

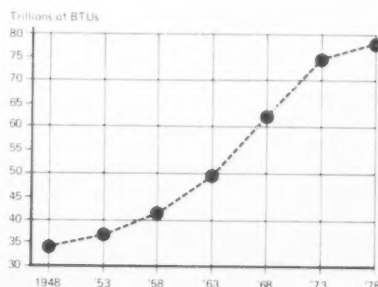


Figure 2 indicates that while the proportion of coal used dropped from 48 percent to 18 percent from 1947 through 1978, the share of both natural gas and petroleum increased significantly. Consumption of natural gas grew from 13.7 percent in 1947 to 33.1 percent in 1971 and was at 25.4 percent in 1978. Consumption of petroleum went from 34.4 percent to 48.6 percent in 1977 and then to 48.4

*SOURCE: William L. Fisher, *Energy Perspectives 2* (Washington: USGPO, 1976), p. 63; Monthly Energy Review, (NII SO B1C1 127-012) National Energy Information Center, U.S. Dept. of Energy (Energy Information Administration, USGPO, Dec. 1977), p. 46; and *Quarterly Report: Energy Information*, Vol. 4 (78) U.S. Department of Energy (Energy Information Administration Washington D.C., p. 6).

FIGURE 2

Percentage of Total U.S. Energy Consumption for Coal, Natural Gas, and Petroleum, 1947-1978
Percent

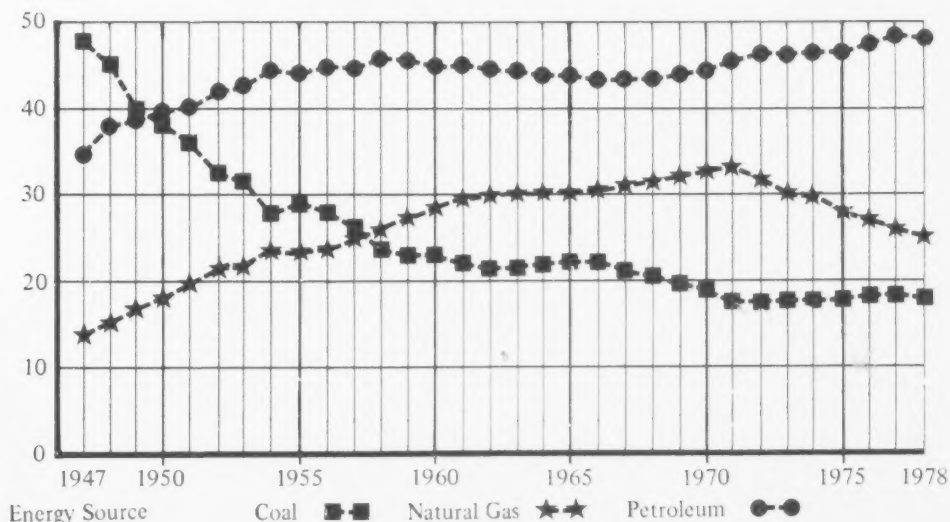
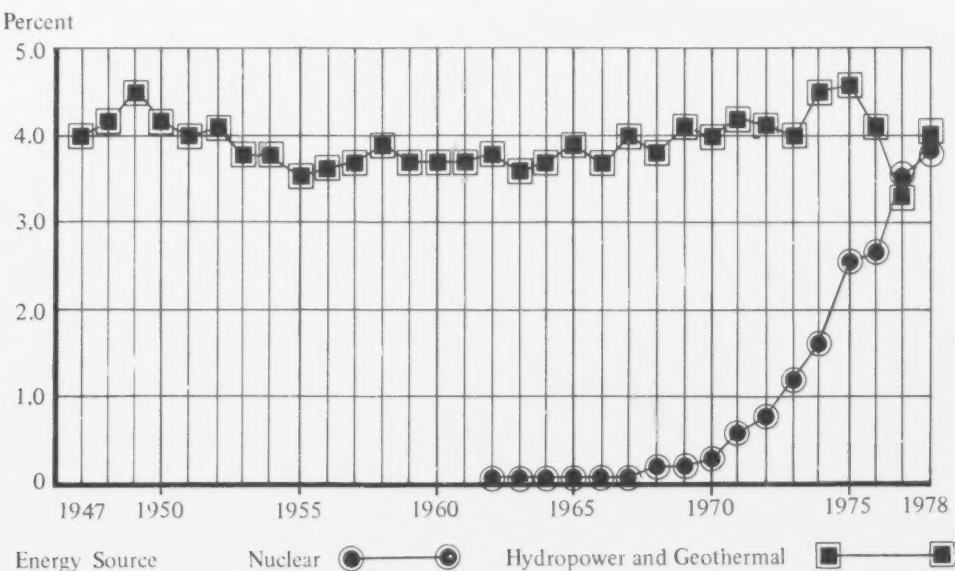


FIGURE 3

Percentage of Total U.S. Energy Consumption for Hydropower and Geothermal and Nuclear, 1947-1978
Percent



percent in 1978. Recently coal has begun again to substitute for natural gas or petroleum. Figure 2 shows that in 1972 coal reached its lowest percentage of energy supplied, 17.3 percent. It then rose continuously to 18.5 percent, dropping slightly in 1978 to 18.1 percent.

During the seventies the U.S. has moved toward greater reliance on nuclear power. Figure 3 shows that in 1970 nuclear power supplied only 0.3 percent of energy consumption, while in 1978 it represented 3.8 percent of total consumption. Figure 3 also shows that for the last 30 years the proportion of energy supplied through geothermal and hydropower has remained very close to 4.0 percent.

DECADES OF GROWTH: COMPARISON AND CONTRAST

Annual Growth Rates

Table 1 shows average annual growth rates for each source of power since 1950. Nuclear power clearly has the highest growth rate. The shift throughout the sixties toward nuclear power pushed growth rates to 50 percent during that decade. Natural gas usage also grew throughout the fifties and sixties but showed a significant reversal in the seventies. Petroleum, with an average annual rate of 3.85 percent, has shown continuous positive growth rates since 1950. The OPEC oil embargo slowed the growth rate of petroleum in the early to mid-seventies as shown by an average annual rate for 1970-75 of 2.2 percent; however, petroleum usage rates in the second half of the seventies shifted back to a 4.9 percent average annual growth rate for 1975-78.

Recently coal has started to grow as a result of the slowdown of natural gas usage. An average annual growth of 3.5 percent since 1975 shows a change from the early seventies, when the average annual growth was 0.3 percent.

Proportion of Total Consumption

Since 1950 petroleum has represented the largest proportion of energy supply. During the sixties petroleum supplied an average of 44.1 percent of all energy consumed in the U.S.; the highest proportion occurred in 1961 with 45.2 percent, and the lowest in 1966 with 43.2 percent. During the seventies average proportion increased to 46.4 percent, with 1977 showing the highest proportion, 48.6 percent, and 1970 the lowest, 44.0 percent.

Natural gas usage significantly increased from 1947 to the end of the fifties. Its proportion of total consumption more than doubled during those years, from 13.7 percent in 1947 to 27.8 percent in 1959. From 1960 to 1971 the proportion of natural gas showed continuous growth, rising from 28.5 percent in 1960 to a high of 33.1 percent in 1971. Since 1971 the proportion of natural gas has slipped each year until it reached a 1978 level of 25.4 percent. This decline represents a significant shift away from natural gas toward petroleum and nuclear power. The rate of decline was 1.9 percent on an average annual basis until 1975, then slowed to 0.2 percent to the present.

As noted earlier, the proportion of coal used dropped from a high of 47.9 percent in 1947 to a low of 17.3 percent in 1972. By the mid-seventies the proportion of coal supplied as total U.S. energy consumption was 18.1 percent. In both 1976 and 1977 coal supplied 18.5 percent. The proportion fell again to 18.1 percent in 1978.

Hydropower and geothermal represented 4.0 percent of total U.S. energy consumption in 1947 and in 1978. The low for the thirty-two years studied was 3.3 percent in 1977.

On the average for the seventies, nuclear power supplied 1.9 percent of U.S. energy consumption. Nuclear power's lowest proportion was 0.3 percent in 1970. The trend toward use of nuclear power has meant a steadily

TABLE 1

Average Annual Growth Rates*

<i>Years</i>	<i>Coal</i>	<i>Natural Gas</i>	<i>Petroleum</i>	<i>Hydropower and Geothermal</i>	<i>Nuclear Power</i>
1950	➡	-1.8	8.6	5.4	-1.0
1955	➡	-2.4	6.6	2.8	3.4
1960	➡	3.3	4.9	2.9	1.4
1965	➡	1.3	6.5	4.9	5.4
1970	➡	0.3	-1.9	2.2	4.0
1975	➡	3.5	-0.2	4.9	0.8
1978					
1950-60	-2.1	7.6	4.1	1.2	-
1960-70	2.3	5.7	3.9	3.4	50.9
1970-78	1.4	-1.3	3.2	2.8	39.4

*Trillions of BTUs

increasing percentage of use, so that by 1978 nuclear power accounted for 3.8 percent of total U.S. energy consumption.

LOOKING AHEAD

Nuclear power will supply a growing proportion of total gross energy consumption unless environmental problems predominate in the future.

The trends indicate a falling proportion for natural gas, which will give way to petroleum and coal. Unless dramatic changes take place in the next few years, hydropower and geothermal will maintain their proportion.

Finding, and properly using, energy supply sources sufficient to meet growing demands will become more difficult, but the primary trends in these sources will reflect current trends.

Where Gasoline Pumps and Service Bays Once Stood

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Insurance companies, bicycle shops, banks, doughnut shops and a host of other enterprises now occupy those choice corner locations where gasoline pumps and service bays once stood. In the past few years, Hoosier motorists have seen many a gas station converted to other uses or left vacant, windows boarded over and pumps removed. During the five years between the Census of Retail Trade taken in 1972 and the Census of Retail Trade for 1977, data from which was recently released, Indiana had a net

loss of 1,368 gasoline service stations.* This 22 percent decline in our state was equal to the national rate of decline in service stations.

*Further information on various aspects of Retail Sales for the State of Indiana as well as for its SMSAs, counties and selected cities can be found in the 1977 *Census of Retail Trade, Geographic Area Series for Indiana*. This report is available at the State Data Center, the Affiliate Data Centers and the Federal Depository Libraries.

Number of Gasoline Service Stations in Indiana Counties,
1972 and 1977

County	Number of Stations		Change 1972 to 1977	County	Number of Stations		Change 1972 to 1977
	1972	1977			1972	1977	
Adams	33	28	- 5	Lawrence	47	48	+ 1
Allen	267	216	- 51	Madison	176	122	- 54
Bartholomew	78	58	- 20	Marion	812	611	-201
Benton	26	21	- 5	Marshall	59	43	- 16
Blackford	28	19	- 9	Martin	23	12	- 11
Boone	50	35	- 15	Miami	47	39	- 8
Brown	9	10	+ 1	Monroe	85	74	- 11
Carroll	22	16	- 6	Montgomery	62	45	- 17
Cass	62	43	- 19	Morgan	46	40	- 6
Clark	91	90	- 1	Newton	29	22	- 7
Clay	38	25	- 13	Noble	46	36	- 10
Clinton	35	35	0	Ohio	5	2	- 3
Crawford	13	12	- 1	Orange	27	17	- 10
Daviess	45	33	- 12	Owen	23	19	- 4
Dearborn	34	24	- 10	Parke	22	20	- 2
Decatur	42	30	- 12	Perry	24	24	0
Dekalb	45	34	- 11	Pike	20	19	- 1
Delaware	148	95	- 53	Porter	100	87	- 13
Dubois	44	36	- 8	Posey	29	23	- 6
Elkhart	142	116	- 26	Pulaski	24	17	- 7
Fayette	29	20	- 9	Putnam	40	32	- 8
Floyd	72	46	- 26	Randolph	51	31	- 20
Fountain	38	33	- 5	Ripley	25	28	+ 3
Franklin	17	15	- 2	Rush	30	24	- 6
Fulton	34	25	- 9	St. Joseph	259	189	- 70
Gibson	47	43	- 4	Scott	22	19	- 3
Grant	101	67	- 34	Shelby	28	30	+ 2
Greene	48	39	- 9	Spencer	32	26	- 6
Hamilton	71	49	- 22	Starke	30	22	- 8
Hancock	49	44	- 5	Steuben	41	39	- 2
Harrison	32	22	- 10	Sullivan	29	27	- 2
Hendricks	62	48	- 14	Switzerland	8	5	- 3
Henry	73	52	- 21	Tippecanoe	128	79	- 49
Howard	94	71	- 23	Tipton	23	20	- 3
Huntington	64	43	- 21	Union	6	7	+ 1
Jackson	50	46	- 4	Vanderburgh	183	138	- 45
Jasper	35	41	+ 6	Vermillion	36	21	- 15
Jay	35	32	- 3	Vigo	142	103	- 39
Jefferson	33	32	- 1	Wabash	41	36	- 5
Jennings	22	17	- 5	Warren	12	6	- 6
Johnson	76	70	- 6	Warrick	28	33	+ 5
Knox	71	51	- 20	Washington	25	21	- 4
Kosciusko	81	66	- 15	Wayne	110	70	- 40
Lagrange	25	23	- 2	Wells	28	22	- 6
Lake	482	388	- 94	White	39	30	- 9
LaPorte	112	104	- 8	Whitley	28	26	- 2

The U.S. Bureau of the Census defines gasoline service stations as establishments primarily selling gasoline and automotive lubricants. Usually these establishments also sell tires, batteries, and accessories and perform minor repair work and services. "Garages" are included if they derive more than one half of their receipts from the sale of gasoline and automotive lubricants. The Census Bureau definition of gasoline service stations thus excludes certain retail stores, such as tire stores or convenience food stores, that have gasoline pumps.

The availability of gasoline may not have changed much from the motorist's point of view. At the intersection where three stations once competed for the gasoline dollar, there may now be only two stations. But the character of a corner may have changed, with a full-service station being replaced by self-service

pumps that are part of an "Open All Night" food store. Large repair facilities at shopping centers may also offer gasoline to the passing motorist. Some motels offer self-service pumps. Not only has the structure of the business undergone some changes, but land use within cities and on highways has changed.

The decline in the number of the gasoline service stations is not uniform. In fact, the accompanying table of the number of gasoline service stations for Indiana counties shows that 5 counties (Brown, Jasper, Ripley, Shelby and Union) actually had an increase in number of stations from 1972 to 1977. Two counties (Clinton and Perry) had no change, and the remaining 85 counties all registered losses in the number of gasoline stations. Marion County had 201 fewer stations in 1977 than in 1972. In 1972, 13 counties had 100 or more stations; in 1977 only 9 counties had over 100 stations.

